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Explainable Artificial Intelligence and Legal Ethos: Developing Key Performance Indicators for 'G20 Giants'

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Keywords

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explainable artificial intelligence,
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public interest

Abstract

Objective: to study the "right to explanation" in the context of the PEEC doctrine (public interest, environmental sustainability, economic development, criminal justice) in order to develop key performance indicators reflecting the socio-cultural characteristics of different countries and ensuring adaptability, transparency and cultural relevance in the regulation of explainable artificial intelligence.

Methods: the research uses a unique methodological approach that combines the iterative processes of soft systems methodology with a theoretical framework based on the PEEC principles. Such integration makes it possible to comprehensively study the social, economic, political and legal regimes of the 'G20 Giants' – the United States of America, the Federal Republic of Germany, Japan, the Republic of India, the Federal Republic of Brazil and the Russian Federation – when designing key performance indicators. The proposed key performance indicators are applicable to assess the transparency and accountability of artificial intelligence systems, simplifying data collection and practical implementation in various cultural contexts. The developed model corresponds to the actual social needs in decision-making using artificial intelligence technologies.

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Results: the study proposes a new legal model for regulating explainable artificial intelligence based on a system of key performance indicators. In addition to eliminating the problems of regulating explainable artificial intelligence in various cultural, ethical and legal fields, this model ensures that the system of regulating explainable artificial intelligence properly takes into account anthropocentric aspects, since it is focused on unlocking the true potential of artificial intelligence. The proposed approach promotes the most effective use of artificial intelligence technologies for the benefit of society in the perspective of sustainable development.

Scientific novelty: the work applies a unique scientific approach that takes into account cultural, ethical, socio-economic and legal differences when developing a legal framework for regulating explainable artificial intelligence. This allows adapting the legal framework to various national conditions, while contributing to responsible management of artificial intelligence with a check-and-balance system.

Practical significance: the results obtained make it possible to use the proposed legal model in the practical activities of government agencies and developers of artificial intelligence systems to ensure transparency and explainability of technologies. Effective adjustment of the proposed key performance indicators, taking into account the specifics of states, will optimize them for universal use. Although all five key performance indicators are relevant for the 'G20 Giants', their relative significance depends on the socio-cultural and legal conditions of a particular state. Further research should cover a wider range of issues, including other developed and developing countries, in order to adapt the regulation of explainable artificial intelligence to various national and global requirements.

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Contents

Introduction

The accountability, transparency and the legal liability of Artificial Intelligence (AI) systems have also evolved with the growing usage of these systems due to their complexities and autonomy. In cases of AI failures, assigning responsibilities and understanding how AI systems make decisions has brought to the forefront the question of its "explainability" (Gilpin et al., 2018; Hacker et al., 2020). To address this concern, the EU's General Data Protection Regulation (GDPR) allows individuals to seek insights into decisions of AI systems (Gilpin et al., 2018). Conversely, for a country like India having complex and heterogeneous cultural and social contexts, applying this right to regulate AI systems poses significant challenges.

Globally, despite advances in the research to enhance the explainability of AI systems, the hitherto proposed frameworks are still devoid of due considerations for diversity in cultural, social and ethnic fabric of stakeholders. Most of the studies indicate that Western models apply universally; this necessarily does not take into account the non-Western, collectivist societies (Peters & Carman, 2024). Existing frameworks also incorporate transparency at the cost of political and economic ideologies on the explainability of AI systems. As a result, such systems are culturally biased and may lead to inconsistencies, if used globally (Prabhakaran et al., 2022). Globally relevant and harmonized AI regulations must embody the core principles of transparency, accountability, security and dynamic societal adaption (Bhatt, 2025).

Culturally adaptive and stakeholder-sensitive AI systems are the need of the hour. AI regulating frameworks must consider cultural, socio-political, ethical and legal heterogeneity across different regions. To ensure equitable and purposeful AI explanations, we need to shift our focus to development of culturally adaptive and stakeholder-sensitive 'Explainable AI' (XAI) models. The 'PEEC Doctrine' propounded by Bhatt & Bhatt in 2023 (Bhatt & Bhatt, 2023) is one promising idea. This proposal not only integrates universally accepted theories of Public Interest, Environmental Sustainability, Economic Development, and Criminal Law (PEEC) to create a realistic approach to development of XAI, but also focuses on transparency considering the broader social, economic, political and legal impacts of AI decisions. The theory has the potential to address AI explanations by duly considering the 'PEEC' elements to promote sustainability and ease of access to explainability while ensuring sufficient accountability with a multi-dimensional perspective on XAI systems to serve the real-world societal needs.

AI/ XAI systems are complex algorithms blending social, ethical and human values. Human perceptions, values and interpretations are crucial in determining the success of these systems. However, conflicting goals and objectives, dynamic and unpredictable and an unforeseen environment, value-laden issues, and a complex interplay between human values, technology, and societal norms calls for a structured and iterative methodological approach besides purely technological or legal strategy to deal with the issue.

In these contexts, the study aims to investigate 'Right to Explanation' and 'PEEC Doctrine' by duly considering diverse cultures and values of 'G20 Giants' (USA, Germany, Japan, India, Brazil, & Russia) using Soft System Methodology (SSM) to develop Key Performance Indicators (KPIs) for adaptable, transparent and culturally sensitive XAI regulations that would enhance the trust and efficacy of AI systems worldwide.

1. Ethical and Cultural influences on XAI in 'G20 Giants'

Sizeable differences in the cultural and ethical core values across many nations especially in terms of individualism (personal autonomy & self-determination), collectivism (Prioritization of Group Solidarity and Communal Well-being), trust in technology (Confidence in Digital Innovations and Automated Systems) and respect for authority (Adherence to Institutional Hierarchies and Governance Structures) has been highlighted by many recent cross-cultural research (Triandis, 2018; Jan et al., 2024). For instance, the United States and Germany are considered individualistic societies, operationalizing personal autonomy and self-reliance (Triandis, 2018). Conversely, cultures like Japan and India, also known as collectivist cultures, emphasize group well-being and social harmony (Eckhardt, 2002). Research evidence suggests that technological diffusion in developed countries rarely reaches the technology adoption rates of developed countries, largely due to socio-economics and digital literacy constraints (Comin & Hobijn, 2011). These cultural features influence policy decisions, societal behaviors, and international relations.

Deeply ingrained societal norms, historical contexts, and national/regional ideologies and policies form the basis for variance in cultural and ethical values across various countries. Table 1 illustrates how different nations uniquely deal with key cultural dimensions.

Table 1. Exploring Cultural Influences of 'G20 Giants' for XAI Regulations

G20 Giants	Ethical and cultural values influencing XAI regulations					
	Individualism (Personal freedom and self-reliance)	Collectivism (Community First Mind-set)	Emphasis on Societal Benefits (Regulations for shared Prosperity)	Trust in Technology (Acceptance of AI, automation, and digital systems)	Demand for Transparency (Accountability and openness in governance and decision-making)	Respect for Authority (Reverence for leadership and order)
USA	Critical	Minimal	Minimal	Significant	Critical	Low
Germany	Significant	Limited	Limited	Significant	Moderate	Significant
Japan	Moderate	Critical	Critical	Moderate	Limited	Critical
India	Limited	Significant	Significant	Limited	Significant	Moderate
Brazil	Limited	Significant	Significant	Limited	Significant	Limited
Russia	Minimal	Significant	Significant	Limited	Minimal	Critical

These elements profusely influence how XAI regulating policies are framed, which shall promote cross-cultural collaboration for universally relevant XAI regulating models simultaneously. This would also guarantee its strict alignment to corresponding societal expectations and values.

2. Existing Provisions of 'Right to Explanation' across 'G20 Giants'

The 'Right to Explanation' has been brought into sharp focus due to increasing universality of legal and ethical debates on AI systems. Many researchers are of the view that this right of explanations may not always be practical and sufficient (Edwards & Veale, 2018; Taylor, 2023; Doshi-Velez et al., 2017). The developed nations, particularly the EU, have established frameworks to deal with complexities in AI decision-making by way of 'Right to Explanation'. Whereas, the developing world is facing a lot of hurdles including legal and technical intricacies in accommodating 'Right to Explanation' into existing frameworks. The practical implementation of the right remains a challenge for developed countries. While a statutory 'Right to Explanation' is a potent mechanism empowering an individual to comprehend and challenge automated systems, its effectiveness depends upon establishing complementary mechanisms like impact assessment and judicial review. To safeguard potential biases and discrimination in automated decision-making, some EU member states have incorporated mandatory impact assessment into their national legislation (Malgieri, 2019). Judicial review provides an additional layer of control and accountability and ensures fairness in automated decision-making (Gacutan & Selvadurai, 2020; Malgieri, 2019).

The complexities of machine language limit the ability of AI developers and operators to provide meaningful and comprehensible explanations for laymen. This calls for a balanced approach whereby neither excessive control nor non-interference circumvents the development of AI systems. Use of AI systems for sectors such as public administration and healthcare ought to meet the standards of safety, transparency and accountability in diverse socio-technical and legal contexts.

Table 2 provides comprehensive information on 'G20 Giants' having provisions of 'Right to Explanation' and corresponding sectors where XAI are currently being employed or planned to be employed.

Table 2. Existing legal provisions of 'Right to Explanation' in 'G20 Giants' for AI systems

Country	Right to Explanation	Existing Legal Provisions	Sector-Specific XAI Example
USA	No explicit legal 'Right to Explanation', but implied in existing laws like the Algorithmic Accountability Act (2022)	– The National Institute of Standards and Technology (NIST) AI Risk Management Framework (AI RMF), 2023[1]. – Federal Trade Commission enacted five law enforcement actions (2024) against operations that use AI hype or sell AI technology that can be used in deceptive and unfair ways[2]	**Finance Sector:** The U.S. Securities and Exchange Commission (SEC) has mandated (2023) that financial institutions must adopt robust AI governance frameworks that emphasize transparency, risk management, and ethical decision-making[3]
Germany	The General Data Protection Regulation (GDPR), 2018 explicitly states that the users have the right to meaningful explanations in automated decision-making	GDPR Article 22, Recital 71, and Article 13, 14 & 15 allows individuals to understand and challenge AI decisions[4]	**Healthcare Sector:** In Germany, under the GDPR, the hospitals are mandated to explain to patient's automated decisions relating to treatment plans and logic behind recommended treatment
Japan	No specific 'Right to Explanation', but for promoting transparency and accountability in use of personal data the Act on the Protection of Personal Information (APPI) exists	A combination of regulations and guidelines is in place[5]. Social Principles of Human-Centric AI (2019), AI Guidelines for Business (2024), and the Japanese Society for Artificial Intelligence (JSAI) Guidelines (2024) attempt to ensure AI development aligns with societal and ethical values	**Automotive Sector:** Autonomously AI-driven vehicles are regulated with strict requirements of safety explainability (Irwan & Mursyid, 2025), but it does not adequately take care of consumers' rights
India	No explicit legal right to explanation, but Personal Data Protection Bill (2023) proposes AI transparency norms	The Personal Data Protection Bill (2023)[6] and the NITI Aayog's (2023)[7] AI policy reinforces explainability and ensures that AI systems are transparent, accountable, and trustworthy	**Banking Sector:** The Reserve Bank of India is working on developing a 'Framework for Responsible and Ethical Enablement of Artificial Intelligence (FREE-AI)' in the Financial Sector[8]

1 National Institute of Standards and Technology (NIST). AI Risk Management Framework. https://clck.ru/3QmQ64

2 Federal Trade Commission. (2024). FTC announces crackdown on deceptive AI claims and schemes. Federal Trade Commission. https://clck.ru/3QmQ9Z

3 Essert. AI Governance Frameworks for Financial Institutions. https://clck.ru/3QmQAn

4 General Data Protection Regulation (GDPR). https://clck.ru/3QmQCt

5 Habuka, H. (2023). Japan's approach to AI Regulation and its impact on the 2023 G7 Presidency. Center for Strategic & International Studies. https://clck.ru/3QmQYX

6 Ministry of Law and Justice. (2023). Digital Personal Data Protection Act, 2023. The Gazette of India, CG-DL-E-12082023-248045. https://goo.su/m3v3Zp

7 NITI Aayog. (2023). National Strategy for Artificial Intelligence. NITI Aayog. https://goo.su/nfPaH

8 Reserve Bank of India. (2023). RBI mandates explainability in AI-driven loan approvals. Reserve Bank of India. https://goo.su/SWi8E

Country	Right to Explanation	Existing Legal Provisions	Sector-Specific XAI Example
Brazil	Proposed explicit 'Right to Explanation' vide Bill 2383/2023[9]	The proposed senate approved Bill guarantees that the individuals or groups affected by high risk AI shall have a right to timely and understandable explanation of the decisions, recommendations and/or predictions made using AI systems. The proposed bill[10] establishes a national regulatory framework governing the use and development of AI systems in Brazil	**Public Safety Sector**: AI systems are employed to predict and prevent crime in major cities of Brazil (Ribeiro et al.,2024)
Russia	No explicit 'Right to Explanation', though the principles outlined in Russia's AI strategy focus on having AI systems that are responsibly designed to protect individuals' rights with transparency	Russia's National AI Development Strategy aims to generate Russia-developed AI products and Services. The emphasis is on development of 'Strong AI' for military operations and national developments[11]	**Military Sector:** Use of AI to provide data analysis for better and faster decision-making capacity to the warfighter in the battlespace[12]

3. Assessing Applicability of 'PEEC' Doctrine for XAI in 'G20 Giants'

A qualitative assessment of the 'PEEC' framework proposed by Bhatt & Bhatt, 2023 is imperative to validate the diverse approaches to AI regulations and context-specific policies that reflect each country's unique socio-cultural and political landscape. AI regulating policies across countries are shaped by their respective socio-cultural priorities and governance ideologies. The elements of 'PEEC' framework, viz. public interest, environmental sustainability, economic development and criminal law have to be evaluated accordingly.

Public interest focuses differ from country to country. The United States prioritizes consumer protection and Germany emphasizes privacy of data, while countries like India and Japan are more inclined to social harmony and equitable access. Countries like Brazil and Russia intend to address governance failures and ensure state security. When it comes to environmental sustainability, countries like the United States and Germany aim to leverage AI for private sector innovation and improving industrial productivity and efficiency. Japan and India are more inclined to achieve long-term goals in smart city planning and water management. Both Brazil and Russia understand that AI systems can

9 Data Privacy Brazil Research Association. (2024). The artificial intelligence legislation in Brazil: Technical analysis of the text to be voted on in the Federal Senate plenary. https://clck.ru/3QmR23

10 The Mattos Filho News Portal. (2024). Framework for artificial intelligence in the Senate. https://goo.su/lbFTrr

11 CNA. (2020). Artificial intelligence in Russia: Issue 11. https://clck.ru/3QmRSw

12 Boulanin, V., & Zerbo, L. (2023, July 20). Roles and implications of AI in the Russian-Ukrainian conflict. Russia Matters. https://clck.ru/3QmRTy

help attain environmental sustainability. Brazil focuses on combating climatic issues while the Russian approach is more focused on the energy sector.

Economically, Russia and Brazil thrive to drive state-led innovations and technological upgradations, while the United States and Germany endorse innovation with structured labour protection and concerns. Japan and India are both keen on developing robotics and finance technologies. AI use for criminal laws also varies significantly. While the United States balances security and personal liberty, Germany emphasizes oversight. Japan employs AI with checks and balances, the Indian approach is to develop safeguards. The Brazilian approach is all about tackling whereas Russia prioritizes security through surveillance. This diverse set of considerations highlights the intricate interplay that ought to be considered for XAI development worldwide.

It is worthwhile assessing the fitness of 'PEEC' principles as proposed by Bhatt & Bhatt, 2023 for ensuring that the XAI regulations shall remain effective, contextual and aligned with societal expectations worldwide. Table 3 shows the fitness of 'PEEC' principles for development of XAI across 'key G20 economies'.

Table 3. Heat-map of Fitness of 'PEEC' Principles across countries for XAI development

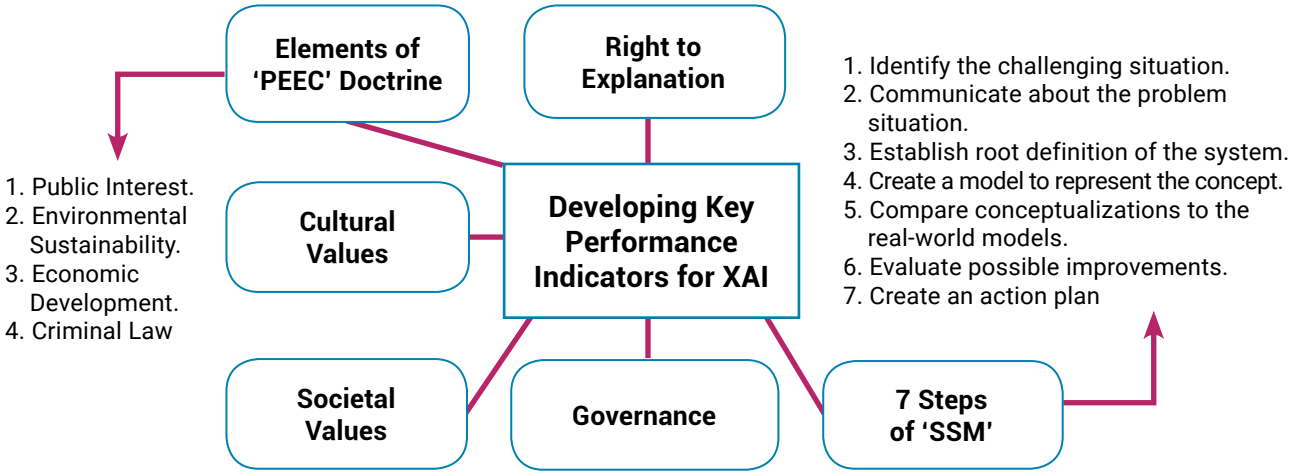
No.	PEEC' Principle	USA	Germany	Japan	India	Brazil	Russia
1	Transparency & Accountability	Yes	Yes	No	Yes	Yes	No
2	Data Security & Privacy	Yes	Yes	No	Partial	Partial	No
3	Ethical Considerations	Yes	Yes	Partial	Yes	Yes	Partial
4	Environmental Impact Assessment	Partial	Yes	Yes	Yes	Yes	No
5	Economic Incentives & Innovation	Yes	Yes	Yes	Yes	Yes	Yes
6	Risk Management & Liability	Partial	Yes	No	Partial	Partial	Yes
7	Public Participation & Consultation	Yes	Yes	No	Yes	Yes	No
8	Law Enforcement & Criminal AI Regulation	Partial	Yes	No	Partial	Partial	Partial
9	Interdisciplinary Collaboration	Yes	Yes	Partial	Yes	Yes	No

4. Developing Integrated Key Performance Indicators (KPIs) for XAI

A purely technical or quantitative approach cannot entirely cover all the inherent complexity, subjectivity, and ethical dimensions of the XAI regulating framework. To forge a truly comprehensive and robust framework, it is imperative to actively engage and incorporate the diverse perspectives of all stakeholders involved in AI systems. Soft systems methodology (SSM) is one interesting approach for tackling problematic and messy situations of diverse varieties, particularly those involving human systems (Checkland & Poulter, 2020).

The SSM allows users to deal with complex technical, political and socio-cultural problems in an organized manner and forces them to look for a holistic solution. The integration of 'PEEC' principles and 'SSM' can provide a potent tool for development of integrated KPIs for practical policy regulations on XAIs.

To truly tap the intricacies of the explainability of AI systems, one must look beyond just the technicalities involved. The authors proposes a novel approach of developing a comprehensive 'Key Performance Indicators' (KPIs) that would bring on board due considerations of Public Interest, Environmental Sustainability, Economic Development, Criminal Law through the structured procedure of 'Soft System Methodology' for a holistic assessment of AI's implications on social, economic, political and legal regimes. Figure shows the conceptual model adopted for the said purpose.



Conceptual Model for Development of KPIs

To develop robust and universally acceptable KPIs for XAI, the SSM approach was employed to incorporate and integrate key dimensions of public interest, environmental sustainability, economic development, legal issues and governance. The structured and iterative process involved in SSM ensured that the developed KPIs would be apt and fitting for diverse cultural and legal contexts. Firstly, a thorough 'Problem Identification' for analysis of challenges to AI's transparency across different landscapes was explored. Secondly, a comprehensive literature review of existing AI policies, academic research publications and news articles were critically analyzed for conducting a 'Rich Picture Analysis' for visually mapping the expectations of key AI stakeholders, viz. policy makers, public, industry and legal experts. Thirdly, for refinement of 'PEEC Dimensions & Impact Areas', 'Root definition' and 'Conceptual Modelling' approach was employed to ensure its alignment with ideologies relating to socio-economic, legal, ethical and environmental sustainability aspects. Fourthly, a 'Comparative Analysis' for validation of real-world

applicability of AI regulation was undertaken. Lastly, an 'Iterative Refinement Cycle' helped ensure that the developed KPIs were not just attuned to the needs but were also practically implementable, rendering streamlined data collection and measurable criteria. Table 4 shows a proposed comprehensive KPI framework for XAI.

For high-risk decisions where the consequences of an unexplained decision are severe, the proposed 'Clarity and Trust Index' (CTI) can be kept at 90 percent to 100 percent depending upon the requirement. CTI value can be as low as 50 percent to 80 percent for routine automated decisions and 70 percent to 90 percent for strategic decisions.

Table 4. Proposed Comprehensive KPI framework for XAI

'PEEC' Dimension & Impact Areas	Proposed KPI	Definition	How to Calculate?
Public Interest: For establishing control over social and legal issues	**Clarity and Trust Index (CTI)**	Percentage of AI decisions that provide clear, understandable explanations to its user	CTI = (E ÷ T) x 100 Where, E = Explained Decision T = Total Decision
Public Interest: For establishing control over social and economic disparity	**Bias Reduction Index (BRI)**	Reduction of Bias in AI decisions across demographics	BRI = 1 - (BB ÷ MB) Where, BB = Baseline Bias = Observed bias in AI decisions (e.g., selection rate disparity between groups). MB = Maximum Bias = The worst-case bias scenario (e.g., one group gets 100%, another gets 0%). If BRI = 0, Maximum Bias = 100, Perfect Fairness
Environmental Sustainability: For ensuring environmental compliance and corresponding green economics	**AI Carbon Footprint Index (AICFI)**	Measurement of environmental impact of AI systems in terms of their energy consumption and greenhouse gas emissions	AICFI = ACF x TD Where, ACF = Energy consumed by the AI system (kWh per decision) X Carbon Emission Factor (kg CO per kWh), which depends on the energy source TD = Total Decision
Economic Development: For ensuring a positive impact of AI on regional culture and economics	**AI Socio-economic Benefit-Cost Ratio (ASEBC)**	Measurement of employment generation, economic benefits and the associated cost of deployment of AI systems to reflect upon the impact of this technology on the economy and culture	ASEBC = EB ÷ CD Where, EB = Economic benefit of deployment of AI system CD = Cost associated for AI deployment
Legal & Governance: For tracking the efficacy of AI systems across different cultures and legal systems	**Cultural & Legal Accountability Score (CLAS)**	Measurement of disputes, public grievances and their corresponding resolutions regarding AI usage across different cultures having their legal regulating mechanism on AI	CLAS = RD ÷ TG Where, RD = Total number of Resolved AI disputes TG = Total number of AI Grievances/ Disputes raised

Ideally, the proposed 'Bias Reduction Index' (BRI) shall be 100 percent, though above 90 percent it shall remain acceptable in most cases. Theoretically, the proposed 'AI Carbon Footprint Index' (AICFI) shall be as low as possible. However, the 'AICFI' can

also be attuned to suit the UN Sustainable Development Goals (SDGs). Most countries would prefer the proposed 'AI Socio-economic Benefit-Cost Ratio' (ASEBC) higher than 1.0 or greater, however, efforts must focus on maximizing net tangible socio-economic benefits. The proposed 'Cultural & Legal Accountability Score' (CLAS) shall ideally be 1.0, though a value higher than 0.9 in most cases would suffice the public expectations. Thorough analysis of country-specific context, stakeholder engagement and necessary understanding of cultural contextual factors shall influence the feasibility and desirability of proposed KPIs indicator values. The onus is on policymakers to devise accurate ranges to reflect national circumstances while remaining globally acceptable in contributing and realizing the true potential of XAI systems for the betterment of mankind.

Effective country-specific careful adjustments to the proposed KPIs will optimize it for universal use. While all the five KPIs are relevant for 'G20 Giants', their relative importance hinges on country-specific socio-cultural-legal contexts. The long-running regulatory debates and corporate initiatives in the USA demand higher 'CTI'. While, in Germany, the provisions of GDPR suggest a need for higher 'BRI' and lower 'AICFI'. Brazilian and Indian policies are more centered on having higher 'CLAS' and 'ASEBC'. Russian policies look to leverage AI in governance and thus have higher 'ASEBC' with a firm strategic focus to uphold national sovereignty and integrity.

Conclusions

Diversities in cultural, ethical, socio-economic and legal choices made by society pose a mammoth challenge before the policy makers to develop a regulating XAI framework that fits international requirements. These factors are in fact, the limiting determinant that have the potential to clinch the success or failure of XAI regulations. Finding a path forward requires attention not only to technological aspects, but most essentially the human dimensions to it. 'Right to Explanation', 'Public Interest', 'Environmental Sustainability', 'Economic Development', and 'Criminal Law' (PEEC) are all exigent and shall ever remain central to all our attempts to regulate AI technologies.

The study proposes a novel KPI based regulating model for XAI based on the principles of PEEC using a structured approach of 'Soft System Methodology'. To truly tap the potential of the proposed KPI model, countries must set nationally relevant indicator ranges that hold value internationally. Besides deracinating the problems of regulating XAI across diverse cultural, ethical and legal landscapes, the proposed model ensures that the XAI regulating framework duly considers the human dimensions as it seeks to harness the true potential of AI. This approach will inspire AI-driven society in the future.

The study only considers the cultural complexities of 'G20 Giants'. Further research or investigations shall encompass a wider spectrum to include other developed and developing nations to make the XAI regulating framework adaptable to diverse national and global demands.

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Authors' contributions

The authors have contributed equally into the concept and methodology elaboration, validation, formal analysis, research, selection of sources, text writing and editing, project guidance and management.

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Объяснимый искусственный интеллект и правовые традиции: разработка универсальных ключевых показателей эффективности для стран «Большой двадцатки»

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Ключевые слова

искусственный интеллект,
общественные интересы,
объяснимый искусственный интеллект,
право,
прозрачность алгоритмов,
уголовное правосудие,
цифровые технологии,
экологическая устойчивость,
экономическое развитие,
этика

Аннотация

Цель: изучить концепцию «право на объяснение» в контексте доктрины PEEC (общественные интересы, экологическая устойчивость, экономическое развитие, уголовное правосудие) для разработки ключевых показателей эффективности, отражающих социокультурные особенности различных стран и обеспечивающих адаптивность, прозрачность и культурную релевантность в регулировании объяснимого искусственного интеллекта.

Методы: в исследовании применяется уникальный методологический подход, сочетающий итеративные процессы методологии мягких систем с теоретической базой, основанной на принципах PEEC. Подобная интеграция позволяет комплексно рассмотреть социальные, экономические, политические и правовые режимы крупнейших стран «Большой двадцатки»: Соединенных Штатов Америки, Федеративной Республики Германия, Японии, Республики Индия, Федеративной Республики Бразилия и Российской Федерации – при конструировании ключевых показателей эффективности. Предложенные ключевые показатели эффективности применимы для оценки прозрачности и подотчетности систем искусственного интеллекта, упрощая сбор данных и практическую имплементацию в различных культурных контекстах. Разработанная модель соответствует реальным общественным потребностям в принятии решений с использованием технологий искусственного интеллекта.

Результаты: в исследовании предлагается новая правовая модель регулирования объяснимого искусственного интеллекта, основанная на системе ключевых показателей эффективности. Помимо устранения

✉ Корреспондирующий автор

проблем регулирования объяснимого искусственного интеллекта в различных культурных, этических и правовых областях, данная модель гарантирует, что система регулирования объяснимого искусственного интеллекта должным образом учитывает антропоцентрические аспекты, поскольку ориентирована на раскрытие истинного потенциала искусственного интеллекта. Предложенный подход способствует максимально эффективному использованию технологий искусственного интеллекта на благо общества в перспективе устойчивого развития.

Научная новизна: в работе применен уникальный научный подход, учитывающий культурные, этические, социально-экономические и правовые различия при разработке правовой базы для регулирования объяснимого искусственного интеллекта, что позволяет адаптировать ее к различным национальным условиям, одновременно способствуя ответственному управлению искусственным интеллектом с системой сдержек и противовесов.

Практическая значимость: полученные результаты позволяют использовать предложенную правовую модель в практической деятельности государственных органов и разработчиков систем искусственного интеллекта для обеспечения прозрачности и объяснимости технологий. Эффективная корректировка предлагаемых ключевых показателей эффективности с учетом специфики конкретных государств позволит оптимизировать их для универсального применения. Хотя все пять ключевых показателей эффективности актуальны для крупнейших стран «Большой двадцатки», их относительная значимость зависит от социокультурных и правовых условий конкретного государства. Дальнейшие исследования должны охватывать более широкий спектр вопросов, включая другие развитые и развивающиеся страны, для адаптации регулирования объяснимого искусственного интеллекта к различным национальным и глобальным требованиям.

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