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### **Abstract**

A method for operationalizing the artificial intelligence' ethical principles through analytical modeling of their regulatory and institutional parameters has been developed. A composite index of public welfare is proposed, integrating digital access indicators, innovation potential, and institutional justice, enabling a quantitative assessment of the ethical guidelines practical implementation degree in AI systems. Methods of multivariate data normalization, scenario modeling, and parametric analysis, as well as elements of hierarchical decision making, are applied to transform abstract normative concepts into computable parameters. The empirical base is formed based on international indices of digital development, innovation, and governance quality for various jurisdictions. The obtained results demonstrate that neither maximum openness nor strict regulatory protection ensures optimal ethical effects. The greatest public welfare is achieved with a balanced combination of regulatory flexibility, institutional quality, and data governance mechanisms, confirming the need for a parametric approach to AI.

### **Keywords**

artificial intelligence ethics; computational modeling; digital governance; data-driven regulation; algorithmic fairness; socio-technical systems; composite indices; AI governance frameworks