

**Krystyna Tonieva, Igor Andriichuk, Serhii Ivanov, Zhanna Semchuk, Serhii Lopatka**

**The impact of artificial intelligence on the strategic planning of economic development of countries. Periodicals of Engineering and Natural Sciences. 2025. Vol. 13, No. 2. P. 489–502.**

**Krystyna Tonieva, Igor Andriichuk, Serhii Ivanov, Zhanna Semchuk, Serhii Lopatka. The impact of artificial intelligence on the strategic planning of economic development of countries.**

**ABSTRACT** Traditional economic planning frameworks struggle to address rapid market changes and nonlinear sectoral interactions, often resulting in suboptimal policy outcomes. This study systematically analyzes how artificial intelligence (AI) transforms strategic economic development across ten countries (the UK, Japan, the USA, China, Ukraine, France, Canada, Singapore, Germany, and South Korea) from 2015 to 2024. Using a mixed-methods approach – integrating panel data regression (fixed-effects and 2SLS models) with a PRISMA-guided review of 89 studies – the research quantifies AI’s macroeconomic impacts and ethical risks. Key findings reveal that a 1-unit increase in AI adoption intensity correlates with a 0.38–0.41% GDP growth rise, driven by predictive analytics in advanced economies like the USA and Singapore. However, infrastructural gaps in Ukraine caused 31% data loss in AI models, hindering policy scalability. Ethical challenges include algorithmic bias in France’s hiring systems (13% minority recruitment disparity) and data privacy breaches in Singapore (19% corporate breach rate). For Ukraine, targeted recommendations include prioritizing AI-ready digital infrastructure (e.g., centralized data hubs) and adopting EU-style ethical audits to mitigate bias in public-sector algorithms. Policymakers globally must balance AI-driven efficiency with equitable governance to harness its full potential.

**Keywords:** Artificial Intelligence, Strategic Economic Planning, Economic Development, Algorithmic Bias, Digital Infrastructure