

Artificial Intelligence as a Catalyst for Growth: Panel Evidence from Technologically Advanced East Asian Economies

Wang Tsung- Li

Department of Marketing Management

Shu-Te University, Taiwan

Email: wsteven@stu.edu.tw

Abstract: This study explores the impact of artificial intelligence (AI) innovation on economic growth in China, Japan, South Korea, Singapore, and Taiwan from 2011 to 2024. Using panel data techniques, including fixed effects, random effects, and pooled OLS models, the analysis examines long-run relationships and Granger causality between AI innovation and GDP growth. Results show that AI innovation significantly boosts growth, while trade openness positively influences performance. Gross capital formation has a negative effect, and inflation shows a mild yet significant impact. Findings highlight the need for policies promoting AI adoption, efficient investment, and trade-driven growth.

Keywords: AI Innovation, East Asia, Economic Growth, Panel Data, Trade Openness

JEL Classification Number: O33; F43; C33