Assessing Asian Countries' Competitiveness: Two-Stage Dea Analysis of Global Innovation Index and Logistics Performance Index Integration

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ABSTRACT

Competitiveness has emerged as a crucial economic characteristic in policy and academia. It refers to the combination of institutions, policies, and factors that determine a country's level of productivity by assessing different aspects of competitiveness. This paper aims to assess the competitiveness of Asian countries by combining Global Innovation Index (GII) and Logistics Performance Index (LPI). The authors implement an integrated model called the Data Envelopment Analysis Super Slack-Based Measure Model (DEA–Super SBM) and the Malmquist Model (DEA–Malmquist) to assess competitiveness from 2012 to 2018. The study begins by validating seven critical factors from the GII and the LPI that impact competitiveness. Subsequently, the Super-SBM model evaluates the competitiveness efficiency for 30 Asian countries during the specified time frame. The DEA–Malmquist model is then employed to analyze the overall change in countries' competitiveness productivity across Asia. This research suggests that most Asian countries have achieved competitiveness efficiency, with countries such as China, Pakistan, and Kuwait demonstrating high indicators. However, a few countries still exhibit relatively low competitiveness indicators, and there has been some variation in competitiveness efficiency over the years. The study's implications can provide valuable insights to governments and policymakers, aiding in developing effective strategies to strengthen competitiveness and foster economic development.

Keywords: efficiency; inefficiency; competitiveness; GII; LPI; Data Envelopment Analysis; Malmquist; Super Slack-Based Measure; Asia