Impacts on Energy and Environmental Efficiency by Media Report – Modifies Undesirable Dynamic DEA

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Cost Effectiveness and Resource Allocation

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Abstract
Background: Rapid economic growth in China has resulted in a commensurate increase in energy consumption, which in turn has caused an increase in environmental pollution problems. Past research has mainly focused on energy and environmental efficiency analyses with little consideration of the influence of media influence on environmental protection. Further, most studies have used static models and have ignored the dynamic changes over time.

Methods: To go some way to filling this research gap, this study developed a modified undesirable Dynamic DEA model that included air quality index (AQI) and CO2 indicators to explore the relationship between energy, the environment and media efficiency in 31 Chinese cities from 2013 to 2016.

Results: It was found that: 1. Chongqing, Guangzhou, Nanjing and Shanghai had efficiencies of 1, but Lanzhou, Shijiazhuang, Taiyuan, Xining and Yinchuan needed significant improvements; 2. while Chongqing, Guangzhou, Kunming, Nanning and Shanghai had relatively high media efficiency, the other cities had low efficiency and required improvements; 3. the CO2 emissions efficiency in most cities was better than the air quality index efficiency; and 4. media reports in most cities were found to have a more positive impact on CO2 emissions efficiency than AQI efficiency.

Conclusions: As environmental awareness enhances the health of civilians and promotes economic growth, the news media needs to promote environmental protection, and should increase its environmental pollution coverage. The quality of media reports on environmental pollution and especially on air pollution need to be improved. Therefore, environmental pollution and awareness media coverage needs to be increased.

Full-text
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