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친환경 차량이 휘발유 소비량에 미치는 영향 연구

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The Impact of Eco-Friendly Vehicles on Gasoline Consumption

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Abstract

This study is distinguished by introducing eco-friendly vehicle variables to estimate domestic gasoline consumption, using stable panel data from 16 Korean regions (2011-2018). The Random Effect (RE) model was adopted via the Hausman test.

The analysis confirmed that gasoline price and hybrid registration significantly reduced consumption, as expected, demonstrating that price policies and hybrid substitution are effective.

However, contrary to theoretical expectations, electric vehicle (EV) registration showed a significant positive effect, contrasting hybrids. Furthermore, gasoline vehicle driving distance showed a significant negative effect, contrary to logic.

This study suggests these anomalies are not errors but reflect market characteristics. We posit the EV effect reflects the early-stage adoption market (acting as a proxy, not a substitute), while the negative distance effect proxies for unmodeled 'technical fuel economy improvements'.

Keywords: Gasoline Consumption, Eco-friendly Vehicles, Electric Vehicles (EV), Panel Data

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