

## Spatial Spillovers in Forecasting Market Diffusion of Electric Mobility

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**Abstract :** In the reduction of CO<sub>2</sub> emissions, the transition to environmentally friendly transport modes has a high significance. In Germany, the climate protection programme 2030 includes various measures for promoting electromobility. Although electric cars at present hold a market share of just over one percent, its stock more than doubled in the past two years. Special measures like tax incentives and a buyer's premium have been put in place to promote the shift towards electric cars and boost their diffusion. Knowledge of the future expansion of electric cars is required for planning purposes and adaptation measures. With a view of these objectives, we particularly investigate the effect of spatial spillovers on forecasting performance. For this purpose, time series econometrics and panel econometric models are designed for pure electric cars and hybrid cars for Germany. Regional forecasting models with spatial interactions are consistently estimated by using spatial econometric techniques. Regional data on the stocks of electric cars and their determinants at the district level (NUTS 3 regions) are available from the Federal Motor Transport Authority (Kraftfahrt-Bundesamt) for the period 2017 - 2019. A comparative examination of aggregated regional and national predictions provides quantitative information on accuracy gains by allowing for spatial spillovers in forecasting electric mobility.

**Keywords :** electric mobility, forecasting market diffusion, regional panel data model, spatial interaction

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