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Power Up Consumption: Impact of Electric Vehicle Infrastructure on Household Finance

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14:30–16:00

WYL314, 3/F, Dorothy Y. L. Wong
Building, Lingnan University



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BIOGRAPHY

Prof. Yi FAN is a tenured Associate Professor in the Department of Real Estate, NUS Business School. Her research focuses on social sustainability and environmental sustainability, and has been published at leading international journals, such as *Nature Climate Change*, *Nature Cities*, *American Economic Journal: Economic Policy*, *Review of Finance*, *Journal of Urban Economics*, *Journal of Environmental Economics and Management*. Yi is currently the Co-Editor of *Labour Economics*. She has been leading/participating in various national and international research grants, and her opinions have been circulated by international and national organizations and media, including *World Bank*, *United Nations*, *Ministry of National Development Singapore*, *The Economist*, *VoxChina*, *Bloomberg*, and *The Wall Street Journal*. Yi has been ranked as the global Top 7% Female Economists (based on past 10 years' publications) by IDEAS RePEc.

ABSTRACT

To achieve carbon neutrality, electrifying vehicles in a cleaner electricity grid has become a key pathway for global cities. While extensive research has examined the environmental benefits of electric vehicles (EVs), their financial impacts remain underexplored. Using Singapore—a smart city-state—as a social laboratory, we combine high-resolution data on the geographic distribution of EV chargers with nearly 1 million individual-level monthly expenditure records from a major commercial bank and about 65,000 housing transaction records, spanning January 2019 to March 2021. Our results show that proximity to charging stations during the initial phase of EV infrastructure rollout significantly increases household consumption by 1–3%. This effect is driven primarily by public housing residents, who are generally more financially constrained than their private housing counterparts. We identify three channels underlying this increase in consumption: appreciation in housing wealth, catalysts for commercial activity and discretionary spending around EV infrastructure, and budget reallocation from fuel expenses to other consumption categories. Notably, hybrid car owners exhibit the strongest trade-offs—reducing fuel spending while increasing expenditure on entertainment or necessity goods among public housing residents. Overall, our findings demonstrate that green infrastructure can shape economic behavior and enhance consumer welfare, extending its impact beyond environmental objectives.