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Poster Title: Breaking Out of the Niche: Matching What Consumers Want to What Electric Vehicles Deliver

Abstract: Passenger vehicles are one of the largest sources of greenhouse gas emissions. With the greening of the electricity grid in the United States (US), replacing conventional passenger vehicles with electric vehicles (EV) could dramatically reduce greenhouse gas emissions. Generally, EV adoption is expected to follow a standard diffusion model. However, transportation systems are complex and subject to significant physical, institutional, and social inertia. Thus, despite the global appetite for vehicle electrification, a diffusion path to large scale electric vehicle adoption in the US is not assured. Among the acknowledged but understudied challenges to EV adoption are the gaps between an individual's intent and actual purchase, at the individual level, and between early and mainstream adopters, at the market level. In addition, existing research into EV adoption often differentiates buyers based on observable demographics, but rarely on latent characteristics, and the stages of the purchase process are often conflated. To bridge those gaps, this research leverages the self-reported experience, behavior, and preferences of hundreds of thousands of new vehicle buyers. In addition, I delineate the five stages of the consumer decision process and examine the internal and external factors that influence vehicle purchase (Taylor & Fujita 2018). Specifically, I frame EV adoption in terms of what new car buyers want and what EV technology can provide. Current EV owners are early adopters, and all vehicle buyers are prospective EV owners. This alternate framing leverages the responses of every new vehicle buyer in the Strategic Vision (SV) New Vehicle Experience Survey (NVES) â€" an annual survey of more than 200,000 new vehicle buyers. The SV NVES includes 1) the entire purchasing process from problem recognition to early ownership; 2) vehicles considered, replaced, and owned; 3) perceptions of vehicle attributes; 4) the purchasing experience; and 5) buyer demographics and psychographics as well as self-perception, hobbies, life style, politics, and emotions. Leveraging the remarkable depth and breadth of the SV NVES for 2014, 2015, and 2016, I will estimate a latent class model â€" classifying new vehicle buyers, assessing the likelihood of EV adoption for each class, and identifying stages in the purchase decision process where individuals are more amenable including EVs in their decision process. Latent classes will be contrasted with more conventional approaches to market segmentation such as vehicle class (e.g., car, mini-van, SUV), demographics (e.g., age, sex, income), and technology adoption life cycle (e.g., early adopter, majority, laggard).