

Publication

Structural equation modelling as a route to inform sustainable policies: the case of private transportation

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The availability of big data allows a wide range of predictive analyses that could inform policies for promoting sustainable behaviors. While providing great predictive power, adopted models fall short in explaining the underlying mechanisms of behavior. However, predictive analyses can be enhanced by complementary theory-based inferential analyses, guiding tailored policy design to focus on relevant response mechanisms. This paper illustrates the complementary value of multidisciplinary inferential models in informing large predictive models. We focus on Structural Equation Modeling, an approach suitable for a holistic examination of different pathways and hypotheses from multiple disciplines. Drawing on an interdisciplinary theoretical framework we develop an empirically tractable model and apply it to a sample of household data from Switzerland. The model focuses on the relationships that delineate the underlying mechanisms for energy consumption behaviors in the case of private transportation. The results are discussed in light of possible contributions to policies aiming at the promotion of sustainable travel behavior as well as data requirements for analyses relying on big data.

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