Bachelor Thesis / Master Thesis: Distorted Beliefs and Consumers’ Carbon Emissions

Climate change is one of the most pressing challenges we face today. The Intergovernmental Panel on Climate Change (IPCC) estimates that human activities have caused the global mean surface temperature to rise by approximately 1.0 °C since the industrial revolution. To prevent global warming from exceeding 2.0 °C and endangering both natural and human systems, carbon emissions need to be significantly reduced (Masson-Delmotte et al., 2021; Pörtner et al., 2022). Consequently, governments worldwide are attempting to implement effective policies.

Consumers have also become increasingly concerned about climate change (Goerg et al., 2022; Gellrich et al., 2021; Leiserowitz et al., 2022). But despite evidence suggesting that many consumers affirm to change their consumption habits, there is a considerable gap between stated willingness and actual behavior (Groening et al., 2018; ElHaffar et al., 2020). In this final thesis project, you will examine to what extent people’s – potentially distorted – beliefs about their actual carbon footprint explain consumption behavior, and whether exogenously manipulating these beliefs ultimately changes behavior.

The final thesis involves developing a survey with a representative sample of the German population. The survey will be representative at the NUTS-2 level with regard to age, gender, and income distribution to ensure sufficient regional and demographic variation. In the first part of the survey, you will use a scientifically-validated carbon footprint calculator developed by KlimAktiv to measure subjects’ carbon footprints in different consumption categories (e.g. housing, mobility). In the second part, you will elicit – for each consumption category – subjects’ incentivized beliefs about their relative carbon footprints, compared to other subjects in the study.

The goal of this thesis is to document systematic correlations between people's beliefs about their carbon footprints and their relative abatement costs of specific consumption activities. For instance, we posit that rural subjects have higher abatement costs for car usage than urban subjects, who generally have shorter commutes and better public transport. Consequently, we expect that rural subjects underestimate the carbon footprint of mobility more strongly than urban subjects. Moreover, the results will help policymakers understand how people’s misperceptions about their carbon impact interact with their individual preferences and life circumstances.

Please send your current CV and transcript of records to christoph.drobner@tum.de if you are interested in the topic.