

# ***CARBON LITERACY – CAN SIMPLE INTERVENTIONS HELP? EFFECT OF INFORMATION PROVISION ON EMISSIONS KNOWLEDGE OF PRIVATE HOUSEHOLDS***

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## **Overview**

Limiting climate change and global warming to at most 1.5°C requires drastic and fast reductions in greenhouse gas emissions within the next years. As private consumption accounts for 72% of global greenhouse gas emissions<sup>1</sup>, promoting pro-environmental household behaviour has an immense emissions reduction potential to help achieve the Paris climate goals<sup>2-4</sup>.

Yet many studies show that individual carbon literacy, i.e. the perception of the carbon emissions associated with lifestyle and consumption choices, is often severely biased<sup>5-10</sup>. Failure to correct these misperceptions can undermine policies to limit carbon emissions substantially<sup>5,6</sup>.

## **Methods**

By means of a survey experiment conducted among a representative sample of 1,492 German households, I ascertain whether and in which areas individuals misperceive carbon emissions using a ranking task. I then test whether simple information provision can correct misperceptions and thus increase carbon literacy, and analyse individual and group-specific influences on carbon literacy using multiple regression and post-hoc tests. I employ two simple, easily scalable information interventions: listing the 10 most carbon-intense household actions and providing a rule-of-thumb heuristic to assess carbon intensities.

## **Results**

The results show that for a sample of 10 actions, respondents severely underestimate the carbon emissions associated with meat consumption, food waste, and to a lesser extent of regularly driving a car, while they overestimate the emissions following the use of plastic bags and not recycling. While the heuristic does not succeed in significantly increasing carbon literacy, providing a ranking of the 10 most carbon-intense actions does so by a substantial amount. In particular, it heals the underestimation of living car-free and improves the respondent's knowledge of the top mitigating actions. However, the severe underestimation of a vegetarian diet and avoiding food waste remains. This indicates that especially the underestimation of food-related emissions is very persistent and deep-rooted.

## **Conclusions**

The results imply that further education is necessary to improve the German public's carbon literacy by providing a basic hierarchy of the most effective mitigation measures. The serious misperceptions highlighted by the results suggest that well-designed interventions to improve the public's carbon literacy could pay large dividends in terms of carbon abatement. With regard to the drastic emissions reductions that need to be achieved in the next years, this paper provides important insights on how to leverage the large potential of private households.

## **References**

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