

Project Title: Construction of an environmental attitudinal score from Visa transactional data

Background

There is growing interest in the development of behavioural interventions to address the climate crisis and mitigate its global threat to humanity and the environment.

This endeavour could be informed by transactional purchase data. Past attempts at estimating CO₂ emissions from these data revealed a strong correlation with overall expenditure and a failure to capture the decision environment in which consumers operate. On the other hand, this information would be crucial for the development of choice architectures.

We propose to construct an environmental attitudinal score from Visa transactional data and analyse how it is associated with different health outcomes.

Aims

- Identify sets of related behaviours with different estimated carbon footprints, such as commuting to work using public vs private transport
- Map these behaviours against VisaNet transactions and construct a cardholder-level environmental attitudinal score reflecting different consumer choices
- Analyse the ecological correlation of this score with health outcomes such as life expectancy and cardiovascular disease

Proposed methods

The project involves secondary analysis of VisaNet transactional data and open data from NHS Digital, the ONS and the Government Statistical Service, the National Atmospheric Emissions Inventory and the Integrated Data Service. The student will be on secondment at Visa Europe for a period of three months, during which they will have access to VisaNet data.

Skills required

- Working knowledge of modern statistics and ML
- Fluency with data manipulation, analysis and modelling tools such as SQL, Python and/or R (experience with the Hadoop ecosystem would be advantageous)

Outcomes

- Cardholder-level environmental attitudinal score derived from VisaNet data
- Ecological analysis of the correlation of this score with health outcomes

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