HOW TO MEASURE MORE SUSTAINABLE HOUSEHOLD FOOD CONSUMPTION USING SUPERMARKET DATA?

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How to Measure More Sustainable Household Food Consumption using Supermarket Data? The Environmentally Sensitive Shopper Index (ESSI)
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Background
Behavioral change by households is increasingly anticipated to make an important contribution to the reduction of greenhouse gases (GHG) and other emissions (e.g., Sierz, 2005).
Global studies have shown that to achieve GHG and other emission reductions from a consumer perspective, important sectors to target are food, housing, mobility, and, with increasing household income, manufactured products.
In Europe, foods are responsible for 20-30% of the overall environmental externalities of household consumption (Takler et al., 2003). Monitoring of the environmental sustainability of food consumption at the household level is necessary to evaluate current performance and initiatives for change. Sustainability assessment tools are commonly characterized by a production perspective. The environmental economics literature has yet to propose a tool to measure environmentally sustainable food consumption at the household level.

Research question
How can we develop an indicator of environmentally sustainable household food consumption based on revised preferences without complete knowledge of the environmental impact of all food products?

Design concepts
- Sustainable consumption is an ethical practice of consuming differently to reduce environmental impact (Evans, 2011).
- Focus on actual food purchase data (supermarket scanner data).
- The change and variation in the environmental sustainability of household food consumption can be captured from a number of key food categories — no need for an exact measure of total food consumption.

PILOT Application
Data are for food purchases in the UK (Tesco supermarket, 16.5 million UK households). The plot results are for the period June 2009-May 2011. It was observed that the ESSI can serve to identify environmentally critical periods. Social norms have little effects on ESSI outcomes. Habits have large effects on ESSI results.

Results and discussion
- The plot results are for the period June 2009-May 2011.
- These show how the ESSI can serve to identify environmentally critical periods.
- Social norms have little effects on ESSI outcomes.
- Habits have large effects on ESSI results.

Conclusions and further research
- The index can be used to proxy sustainable consumption at the consumer end of the food chain, both through cross-sectional and repeated cross-sectional analysis. This enables systematic monitoring of the environmental impact of food sales.
- The resulting information can be used to enhance sustainability of household food consumption through marketing strategies, for instance through the promotion of environmentally friendly products or by the use of ESSI in marketing campaigns.

References

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