THE RELEVANCE OF GREEN AND REGIONAL IDENTITY FOR THE DEMAND FOR GREEN AND REGIONAL ELECTRICITY TARIFFS: EMPIRICAL EVIDENCE FROM A COMBINED PRIMING AND STATED CHOICE EXPERIMENT

Elke D. Groh, University of Kassel, +49 561 804-3044, elke.groh@uni-kassel.de
Andreas Ziegler, University of Kassel, +49 561 804-3038, andreas.ziegler@uni-kassel.de

Overview

The consumption of green electricity contributes to climate change protection as green electricity is produced without greenhouse gas emissions, i.e. emissions are directly reduced compared to the conventional production of electricity, and because the demand for green electricity tariffs can drive out conventional electricity production and thus promotes the transition towards renewable energies. However, the real choice of green electricity tariffs is strongly lower than the stated preferences for renewable energies or for the transition towards renewable energy production. For instance, in Germany the energy transition is supported by 93% of the population (AEE, 2016), while only 19% of households have a green electricity tariff. (BNetzA, 2016). A recent attempt of the German government to increase this share is the promotion of green electricity tariffs by the inclusion of an additional tariff attribute referring to the share of regionally produced electricity besides the composition of energy sources (BMWi, 2016). The regional and thus decentralized production of electricity can be seen as an additional contribution to a sustainable energy system (Kalkbrenner and Yonezawa, 2016). Against this background, this paper empirically examines the preferences for green and regional attributes of electricity tariffs.

Previous empirical analyses of the demand for different electricity tariffs are mostly based on data from stated choice (SC) experiments, which generally refer to decision contexts where choices are made on the basis of hypothetical situations that are described by different levels of the same attributes. The choice among different electricity tariffs can comprise different attributes such as costs, price guarantee, electricity mix, kind of power provider, location of electricity generation, certification, cancellation period (e.g. Burkhalter et al., 2009; Kaenzig et al., 2013), transparency of price, participation in firm's decision making, owner structure (Sagebiel et al., 2014), or share of locally produced electricity (Kalkbrenner and Yonezawa, 2016). The main attractiveness of the use of SC experiments is the possibility to consider electricity tariffs which are currently not introduced to the market (Louviere et al., 2000). In line with previous studies, our econometric analysis is also based on a SC experiment for several electricity tariffs which especially includes green and regional attributes.

Compared to previous studies, we focus on the effects of green and regional identity on the electricity tariff choice. However, the identification of the effect of identity is not easy since it is often confounded by several other factors such as socio economic variables or peer pressure (Benjamin et al., 2010). To identify the pure effect of identity, the psychological literature has developed a specific methodological approach, namely priming. Priming has been recently applied to economics and figured out to affect economic behavior. However, priming effects depend on the specific identity and specific economic behavior (Benjamin et al., 2016). To the best of our knowledge, only two economic studies use priming methods in the field of environmental behavior. Johe and Bhullar (2016) examine the role of organic and pro-environmental identity on organic consumerism and Kesternich et al. (2016) examine the effect of regional identity on the contribution in a public goods game. Hence, we extend these studies by capturing both regional and green identity and applying it to the choice of green and regional electricity tariffs. The empirical analysis is based on unique representative household data, which were collected in web-based interviews by a market research company in Germany in summer 2016. Overall, more than 3,700 respondents participated in the survey.

Methods

Based on data from a SC experiment which comprises two priming experiments including treatments for green and regional identity, our microeconometric analysis uses flexible mixed logit models.

First results

Our preliminary empirical analysis reveals that respondents in the green priming treatment group have a higher stated preference and thus a higher willingness to pay for green electricity tariffs. Furthermore, they have a slightly higher preference for tariffs of regional electricity providers. Respondents in the regional priming treatment group have a slightly higher stated preference and willingness to pay for electricity tariffs of german electricity providers. However, effects of the regional priming task are lower compared to the green priming task.

First conclusions

Our (preliminary) findings have several useful practical implications. In Germany there is a draft law which might lead to the opportunity to sign electricity to be produced in the customers' region (BMWi, 2016). Thus, our empirical analysis gives a first insight if the efforts of the German legislation are worthwhile or if efforts should be directed into another direction. Further, our results might be of interest for commercial enterprises to design their products in line with the demand for green and regional energy tariffs and use stimuli similar to the priming task to increase demand for green electricity tariffs.

References

Agentur für Erneuerbare Energien (AEE) (2016): Repräsentative Umfrage. Weiterhin Rückenwind für Er-neuerbare Energien. Available online at https://www.unendlich-viel-energie.de/repraesentative-umfrage-weiterhin-rueckenwind-fuer-erneuerbare-energien, updated on 23 September, 2016, che-cked on 30 September, 2016.

Benjamin, Daniel J.; Choi, James J.; Fisher, Geoffrey (2016): Religious Identity and Economic Behavior, mimeo.

Benjamin, Daniel J.; Choi, James J.; Strickland, A. Joshua (2010): Social Identity and Preferences. The American Economic Review 100 (4), pp. 1913–1928.

Bundesministerium für Wirtschaft und Energie (BMWi) (2016): Regionale Grünstromkennzeichnung. Eckpunktepapier, 11. März 2016.

Bundesnetzagentur (BNetzA) (2016): Monitoringbericht 2016, November, 2016.

Burkhalter, Andreas; Kaenzig, Josef; Wüstenhagen, Rolf (2009): Kundenpräferenzen für leistungsrelevante Attribute von Stromprodukten. Zeitschrift für Energiewirtschaft, pp. 161–172.

Johe, Miles H.; Bhullar, Navjot (2016): To buy or not to buy. The roles of self-identity, attitudes, perceived behavioral control and norms in organic consumerism. Ecological Economics 128, pp. 99–105.

Kaenzig, Josef; Heinzle, Stefanie Lena; Wüstenhagen, Rolf (2013): Whatever the customer wants, the customer gets? Exploring the gap between consumer preferences and default electricity products in Germany. Energy Policy 53, pp. 311–322.

Kalkbrenner, Bernhard; Yonezawa, Koichi (2016): Consumers' willingnes to pay for locally produces green electricity. A choice experiement and contingent valuation study, mimeo.

Kesternich, Martin; Goeschl, Timo; Lohse, Johannes; Römer, Daniel: Reif, Christiane (2016): An online experiment on cooperation and groupishness across urban districts, mimeo.

Louviere, Jordan J.; Hensher, David A.; Swait, Joffre F. (2000): Stated Choice Methods and Analysis. Cambridge University Press, Cambridge.

Sagebiel, Julian; Müller, Jakob R.; Rommel, Jens (2014): Are consumers willing to pay more for electricity from cooperatives? Results from an online Choice Experiment in Germany. Energy Research & So-cial Science 2, pp. 90–101.