

Economic Bulletin

» Regulation

Competition

International Economics

Economic Impact

Labor Markets

» Innovation

Sustainable Growth

» Energy Sector

Climate Change

ICT

Health Care

Berlin Economy

Postal Services

Telecommunications

Energy Efficiency

» Renewable Energies

TO INVEST OR NOT TO INVEST – CONSUMER PREFERENCES AS GUIDING LINE

Recent research by DIW econ shows how to analyze consumers' preferences and willingness to pay for new and complex products

The ultimate driver of product market development is consumer demand. In well-established markets prices and volume of sales can be observed more or less easily. However, consumer behavior is hard to predict in markets for new or complex products such as ICT services, green electricity, or health care. Even though such markets are often shaped by political frame conditions, from a business point of view the decision whether to enter a market or to invest into new projects must be built on solid knowledge about consumer demand. Moreover, in a political context data on consumer preferences allow to find optimal regulation maximizing economic welfare.

Innovative research techniques can provide insights into consumers' preferences and their willingness to pay for different product aspects. A recent research project by DIW econ on the German market for green electricity may serve as an example.

A close inspection of the retail market for electricity products reveals that electricity – in contrast to intuition – is not a homogeneous product. Electricity products consist of a variety of

attributes such as the nature of power generation or the ecological profile of the supplier. Therefore, the price is not the only decisive variable.

To assess consumers' preferences and willingness to pay for different aspects of electricity products, we carried out a survey representative for all potential consumers of green electricity in Germany. We defined several relevant attributes of electricity products which are either linked to the product itself, such as the energy source (green electricity vs. conventional energy sources), or to the power supplier, such as its investment strategy.

Assessing consumers' willingness to pay:

A discrete choice analysis

An obvious approach to evaluate consumers' preferences regarding these attributes is to let them rate each attribute separately. The results of this "direct" approach indicate that most consumers care about the ecological quality of their electricity product. However, asking con-

sumers about the importance of product attributes in a direct way has two major drawbacks. On the one hand, it is not easily possible to translate the stated importance into a monetary valuation. However, such a valuation is essential, e.g. for evaluating the overall profitability of an investment. On the other hand, assessing each product attribute separately may severely bias the results. In reality, consumers make choices between complex products that combine different attributes. Thus, they face trade-offs between different attributes and may, for instance, possess different levels of willingness to pay for two attributes which they would consider as equally important in an isolated assessment.

Therefore, we conducted a so called *discrete choice analysis* which provides detailed insights into consumers' willingness to pay for different product attributes. In such an analysis, consumers are given the choice between two products which combine different attributes. Based on the consumers' choices, it is possible to calculate their willingness to pay for each attribute.

High willingness to pay for investments into renewable energy plants

In principle, the discrete choice analysis confirms the main result from the isolated assessment of the product attributes, i.e. consumers appreciate the ecological attributes of electricity products. However, there are large differences between the willingness to pay for different attributes.

Consumers reveal a very high willingness to pay of about 8 cents (EUR 0.08) per kWh for an electricity product from a supplier actively investing into additional renewable energy plants. Also, consumers are willing to pay up to 3.6 cents for electricity from a supplier that exclusively distributes green electricity. Compared with these values, the willingness to pay for electricity from renewable energy sources, i.e. green electricity in a narrower sense, is somewhat lower with 2.2 cents.

The results also show that consumers appreciate attributes of electricity products which are

not related to their ecological impact,

such as a price guarantee or products from regional suppliers. It is striking that consumers' willingness to pay for supplier-related attributes like investment strategy or a firm's regional focus is relatively large as compared to the attributes which are directly linked to their tariff. In particular, consumers care more about the general profile of their supplier than about the actual source of their electricity.

Conclusions

Discrete choice analyses prove to be useful for the in-depth analysis of consumer demand. The knowledge of consumers' willingness to pay permits evaluating whether an investment will be profitable. In particular, this information is useful to assess the regulation, size or demarcation of markets. Additionally, the methodology permits the identification of the complete demand curve and thus the evaluation of welfare gains and consumer surplus in an economic cost-benefit analysis.

In an example, consumers in the electricity market distinguish between different attributes of electricity products. Hence, besides the price, other properties of electricity products are a major criterion for their purchase decision. A discrete choice analysis revealed that there is a very high willingness to pay for supplier-related product attributes such as their investment strategy or their regional focus.

There are many further applications besides the electricity market: For example, a discrete choice analysis may be applied to assess consumer demand for innovative products like IPTV or broadband rollout in rural areas. Moreover, the methodology allows identifying the demand for specific product attributes like connection speed or download/upload symmetry. Thus, this approach provides essential data for the discussion about the best way towards complete broadband rollout and the assessment of policy measures like a universal service obligation, access regulation or public infrastructure investments.

DIW econ – the consulting company of DIW Berlin

Who we are

DIW econ is an economics consultancy with a clear focus on the needs of business clients and international institutions. Our clients are facing major decisions and need knowledge about the consequences of their choices. We deliver applied analysis by making the data tell their story. Our work is based on modern economic insight, advanced economic tools and real world data to produce concise state of the art research. We achieve excellence through the combination of strong academic research and experienced consultants.

Our services

We provide economic expertise in areas such as...

- Analysis at firm, industry and economy-wide level
- Assessing perspectives of key economic sectors
- Forecasting future energy demand
- Assessing market regulations (third party access, licensing, competition, tariff setting)
- Strategic advice on market positioning
- Impact analysis of tax reforms
- Evaluation of labor market policies

Our competitive edge

We are a 100% subsidiary company of the German Institute for Economic Research – DIW Berlin. To turn academic excellence into added value for our clients, project teams at DIW econ include experienced consultants as well as scientific staff of DIW Berlin on a case-by-case basis. In this way we combine the relevant sector-specific know-how of our consultants with the theoretical foundation and the sound knowledge on economic modeling and empirical methodologies of world-class economists.

How to contact us

DIW econ GmbH
Mohrenstrasse 58
D-10117 Berlin
Germany

www.diw-econ.de
service@diw-econ.de
Tel. +49 30/20 60 972-0
Fax +49 30/20 60 972-99