iPower SPIR COWI

Stated preference study of consumers preferences for temperature fluctuations

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Summary

In 2025, 50% of Denmark's electricity should be based on wind energy. The iPower platform will help to meet this ambition by developing an intelligent and flexible energy system that can handle a fluctuating power generation. Increased flexibility in power consumption enables consumption based on wind power, and reduces the need for investment in electricity distribution networks.

The present study deals with consumers' willingness to accept larger flexibility in power consumption and answers questions like: How large temperature fluctuations are consumers willing to accept? Are there differences in consumer preferences between different segments of respondents?

The study is based on a Stated Preference survey including monthly expenditure for energy, fluctuations in temperature, information on savings and share of green energy in the Stated Preference experiments. 1000 respondents participated in the survey and answered the questionnaire and the Stated Preference experiment.

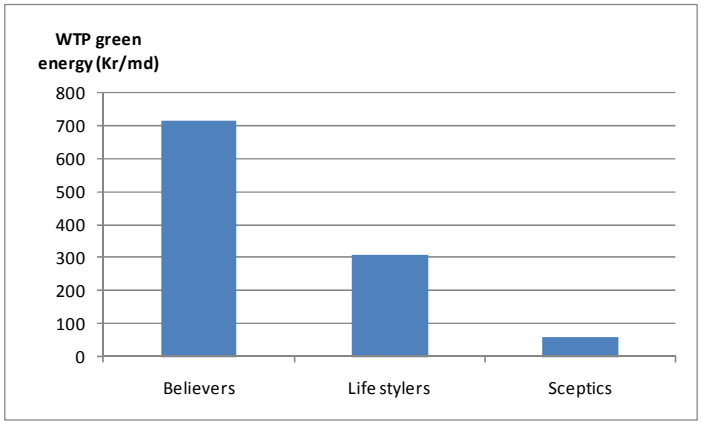
The study shows that the most important decision parameter for consumers is the temperature fluctuations, in the second place comes the monthly cost and in third place comes the environmental awareness in form of green energy. Other main conclusions from the study are:

- People would accept 2 degrees of temperature variation without further notice
- There is a substantial willingness to pay for green energy
- People would accept to substitute up to 4 degrees of variation for 50% green energy
- There is a relative low willingness to pay for information panel
- Willingness to pay is approx. 60% of willingness to accept

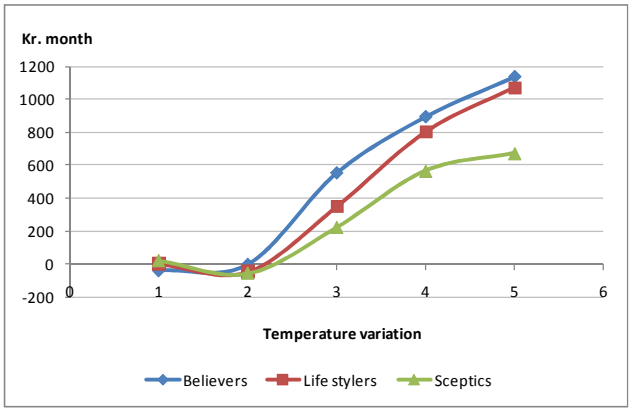
There are only few and scattered correlations between socio-economics and willingness to pay. One of the few is that women answer more environmentally friendly compared to men.

Besides Stated Preference survey, the study included a Cluster analysis. Based on the cluster analysis the respondents were segmented in three groups:

- Believers: Pro climate but within reason and with an eye to practicality.
- Lifestylers: Pro climate but their lifestyle takes precedence, eg. cars, food
- Sceptics: Not decidedly negative towards climate, but not pro climate either



Looking at attitudes towards the environment there are some differences between the three groups. Most important, the environmentally friendly Believers have proved to have a significantly higher willingness to pay for green energy. On the other hand, it has proven difficult to separate the three segments based on socio-economics. Therefore, it would be difficult to target campaigns against the individual segments based on socio-economic factors.



As mentioned already, the environmentally friendly Believers have proved to have a significantly higher willingness to pay for green energy compared to the other two segments. That does not mean that they will sit at home and freeze to help the environment. The Believers have very much the same preferences for temperature fluctuations as the other segments. But their willingness to pay is higher, so they are more willing to pay to avoid temperature fluctuations compared to the other segments.

The presentation at the conference will elaborate the study method, the results from the cluster analysis and the Stated Preference analysis in more detail.