

Estimating Consumer Preferences among Diverse Electric Services

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I. OVERVIEW

Traditionally, economics offers a rather simple picture of how consumers make consumption decisions: given a stable preference, a consumer selects the most preferred consumption bundle that is affordable under one budget constraint. In recent decades, however, empirical and experimental studies have accumulated robust evidence indicating that this simple picture does not provide an accurate descriptive theory of consumer behavior. The responses of the discipline to these empirical challenges was the development of a new field of study that combines findings from psychology with the economic approach to study consumption decisions—what have become known as *behavioral economics*.

II. METHODS

In terms of obtaining empirical data to evaluate the validity of our proposed solutions, we offer two approaches: field experiments and laboratory experiments.

For field experiments, we recruit participants (subjects) to participate in different real pricing schemes that are specially designed for eliciting the subjects' preferences. Subjects will be making real consumption decisions during the period of the experiments, which typically last for a few weeks. Consumption data during the period will be collected and analyzed.

III. RESULTS

We must understand how consumers value electricity to power energy consuming devices and provide comfort services, given that a majority consumers have not internalized the price of electricity but a coarser measure of its cost (e.g., a monthly bill). The expected research outcome from addressing this knowledge gap is to implement measures that can improve energy utilizations and support related societal objectives (e.g., air emissions and increased use of renewable energy sources).

We are developing experiments aimed at establishing the internalizations of changes by consumers. Once information becomes more granular, the issues of information salience and framing (Paetz, Dütschke, and Fichtner, 2012) come to the forefront.

IV. CONCLUSIONS

This proposal attempts to apply behavioral economic concepts to shed light on how consumers form their preferences with respect to the consumption of electricity. We would like to have this paper as part of a session discussing the use of experimental economics methods and demand response. We discussed with Inez Azevedo at Carnegie Mellon University and she plans to submit an abstract as well.

NOTES

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REFERENCES

- Paetz, A.G., E. Dütschke, and W. Fichtner. 2012. "Smart Homes as a Means to Sustainable Energy Consumption: A Study of Consumer Perceptions." 35:23–41.