Sustainable Healthy Cities
A National Science Foundation-supported Sustainability Research Network (SRN)

JOURNAL BRIEF: Who is susceptible to inattention in electronic bills?

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This brief is adapted from a peer-reviewed journal article: Curley, C., Rustamov, G., Harrison, N. and Venable, M. (2020), Susceptibility to Inattention: Unpacking Who is Susceptible to Inattention in Energy-Based Electronic Billing. Rev Policy Res, 37: 744-764 https://doi.org/10.1111/ropr.12404

Study Intent and Research Question

Electronic bills (e-billing) can be sent more frequently than paper bills, giving people more detailed feedback on energy consumption that could potentially motivate conservation behavior. However, this only works if customers pay attention to their bills. This study examines the impact of e-billing on energy consumption for residential homes in Tallahassee, Florida. In particular, it addresses the question of whether some groups of people are more susceptible than others to inattention as a result of e-billing.

Key Background Information

Inattention refers to a person's limited capacity to process information, perform calculations, and allocate attention to tasks, resulting in attention as a scarce resource. While e-billing can give people enough detailed information to reduce their energy consumption, its electronic format puts it into competition with other tasks performed electronically, such as browsing the internet or checking email. This can result in inattention to e-bills. Some researchers have speculated that this may result in negative consequences such as unintended increases in consumption. Inattention could thus be detrimental to making economically beneficial decisions and could disincentivize the procurement of critical information regarding consumer choices.

If different groups of people have differing levels of inattention for energy e-bills, this has equity implications for utilities as they develop and communicate new billing policies. If specific groups are more susceptible to inattention in certain settings, this can act as a barrier to resource access and information about beneficial behavioral changes (such as switching appliances), resulting in an inequitable distribution of benefits and burdens. Therefore, this study investigates to what degree people of varying demographics are susceptible to inattention to their e-bills.

The study drew on a sample of residents in Tallahassee, which has a municipally owned utility and a portfolio of demand side management programs. The researchers used a database of household consumption and characteristics to better understand how individuals are influenced by digitization of information.

Key Findings

Overall, participation in an opt-in e-bill program led to reduction in energy consumption, with participants reducing their electricity consumption by a little more than 3% on average (or over 30 kWh) per month relative to non-enrollees.

This shift was mainly driven by lower-income areas. Lower income groups decreased their

energy consumption by 4.4% on average, while no similar effect was observed for higher income groups.

Researchers did not find that e-billing was associated with an increase in consumption (a hypothetical consequence of inattention).

This suggests that for lower income households, e-billing provides salient actionable information. For higher income households, e-billing does not appear to serve the same purpose—in fact, it may serve to minimize attention requirements for bill paying by increasing convenience.

Policy and Practice Implications

These findings indicate that e-billing does have the potential to reduce energy consumption through energy feedback for some segments of customers. Budget-constrained, lower-income customers are more likely to act upon the information provided in their e-bill, reducing their energy consumption.

For higher income customers, e-bill content may require the inclusion of different information that addresses these customers' heuristics, biases, and nudges them towards savings. This may have implications for how e-bills should be designed with targeted information for different segments of customers.

It is important to note that this study is based upon an opt-in e-bill program—that is, participants had to actively choose to receive their bills in electronic format, with paper being the default. If e-billing were the default, it is possible that the associated decrease in energy consumption could have large-scale impact.

Policy & Governance

Further Reading and References

Keefer, Q. & Rustamov, G. (2018). Limited Attention In Energy Markets: A Regression Discontinuity Approach. Empirical Economics, 1-25. https://doi.org/10.1007/s00181-017-1314-6.

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Corresponding Author: Cali Curley (calicurley@miami.edu)

About the Sustainable Healthy Cities Network

The Sustainable Healthy Cities Network is a U.S. National Science Foundation-supported sustainability research network focused on the scientific advancement of integrated urban infrastructure solutions for environmentally sustainable, healthy, and livable cities. We are a network of scientists, industry leaders, and policy partners committed to building better cities through innovations in infrastructure design, technology, and policy. SHCN connects nine research universities, major metropolitan cities in the U.S. and India, and infrastructure firms and policy groups to bridge research and education with concrete action in cities.