

# Behavioral Effects of Sliding Scale Mechanisms on Participation in Assistance Programs

An experimental case in the context of Meals on Wheels

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**Project Funding Years:** 2019–2021

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## Background and Objectives

Sliding scale cost sharing is a common approach among nonprofits and charities to raise revenue without turning people away. Sliding scales are constructed such that clients pay a portion of the cost of the service based on their reported incomes. Oftentimes the lowest earners are not asked to pay anything and receive the service for free. Sliding scales are used frequently in healthcare and for other critical services.

Despite their ubiquity, sliding scales are not well understood from a behavioral perspective and have received little attention in the literature. However, their design and potential to be influenced by behavioral effects make them a ripe area for research.

The overarching goal of the project is to detect behavioral responses to sliding scales and, thus, make recommendations for their design. A theoretical model is developed and then tested with an experimental survey where the service of interest is Meals on Wheels, which provides meal delivery services to homebound seniors and often employs cost sharing to help cover program expenses.

## Relevant Behavioral Concepts

When a client or potential client is given a price based on a sliding scale, often they are told more than just the price they are expected to pay for the service. While different providers present sliding scales in different ways, common approaches lend themselves to the following behavioral phenomena:

- **Framing Effects:** If the provider shows the client the full scale (i.e., how much different clients are expected to pay), the client's income/ability to pay is also implicitly compared to others who have to pay more or less, which may create a framing effect. A framing effect is a cognitive bias whereby an individual's valuation of a choice changes when it is presented as a loss or gain.
- **Price Anchoring:** Some providers tell clients the full cost of the service to the provider. The disclosure of the full cost may create an anchor price that affects the client's behavior (i.e., willingness to participate in the program at the price offered).

The first stage of this study will focus on **framing effects**.

## Research Questions

1. Does a sliding scale decrease participation among potential clients?
2. Does being placed in the lowest level of a sliding scale reduce participation among clients?

## Hypotheses

There has not been much research into the relationship between sliding scales and participation in services, with the major exception being Ku and Coughlin (1999). They found that participation in a healthcare program generally decreased as relative price increased; however, there was a slight increase in participation among the second-to-lowest income groups. Their findings suggest that stigma might be at play among those placed in the lowest group on a sliding scale. Based on their findings, **this study hypothesizes that a sliding scale will decrease participation among those who are placed in the lowest level.**

## Sample

This study will use Qualtrics survey services to conduct an online, experimental survey of 2,000 lower-income and/or resource-limited seniors from across the United States.

## Methods

The survey will be designed with different treatments that provide varying levels of information to potential Meals on Wheels clients. Respondents will be provided with a narrative where they are told to make decisions about enrolling in a Meals on Wheels program. They will be given a description of the service and then offered a price within the context of a random treatment. Participants can accept or reject the price. The first treatment will provide no information other than a stated price for services. The second treatment will ask for the client's income and then present a price for services. The third treatment will ask for the client's income and then present a price for services in the context of a sliding scale where the client has been placed in the lowest income category. And, the fourth treatment will ask for the client's income and present a price for services in the context of a sliding scale where the client has been placed in a middle category. The price will be constant for all clients; only the framing will change. Participation rates will be compared across treatments.

## Practice and Policy Implications

While there is no clear measurement of how common sliding scale fee structures are, a quick Google search reveals their use by a variety of providers from therapists to women's clinics to tattoo artists. Anecdotally, they appear to represent a common strategy for raising revenue without restricting service reach. A better understanding of how clients respond to sliding scales will help improve their design so that these providers can continue to reach their target clients without sacrificing critical funds needed to continue operations. This project focuses specifically on Meals on Wheels, where demand is likely to be relatively elastic compared to healthcare services.

### Reference

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## About the BIS Grant Program

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# A Novel Approach to Professional Development for Early Childhood Educators and Caregivers

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**Project Funding Years:** 2019–2021

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## Background and Objectives

Early education and care systems invest heavily in professional development (PD) programs aimed at improving quality, and some PD programs have been able to improve early educator and caregiver skills. However, traditional PD approaches are often complex and resource intensive, which can limit the widespread expansion of PD to early education and care systems more broadly.

The current project considers whether an alternative approach could be used to make PD more accessible for early educators and caregivers. Specifically, this project examines the efficacy of a potentially scalable and cost-effective researcher-developed intervention – so-called Early Learning Study at Harvard (ELS@H) Bits – aimed at improving the knowledge, beliefs, and practices of early educators and caregivers working with four-year-old children across Massachusetts. The ELS@H Bits intervention involves sending educators and caregivers text messages containing actionable information on two practices: (1) using transitions as meaningful learning opportunities, and (2) encouraging children’s language through open-ended questions.

## Relevant Behavioral Concepts

Several key insights from behavioral economics underlie the design of the ELS@H Bits intervention. First, humans have imperfect information. In the case of educators and caregivers, there exists imperfect information about which practices are most important to implement and as such, ELS@H Bits messages provide clear signals about two key practices proposed by the field (Farran et al., 2017). Second, humans are more likely to act on proximal information. That is, educators may be more likely to incorporate novel information into their practices if that information is top of mind. ELS@H Bits makes content accessible to educators and caregivers through a common communication medium (i.e., text messages) at a time proximal to when educators interact with children (i.e., the start of the day). Third, the relevance of information to individuals’ daily demands is also likely to underlie the translation of knowledge into action. The intervention offers tips that educators and caregivers may immediately employ at critical points in the day (e.g., to manage stressful transitions). Fourth, social forces support the transfer of knowledge to practice. Humans are influenced by their perceptions of what other humans do and thus the messages frame the targeted practices as commonplace among other early educators and caregivers to encourage implementation.

## Research Questions

The study addresses the following two research questions:

- Does the ELS@H Bits program influence educator and caregiver knowledge, beliefs, or practices related to two key practices (i.e., making transitions meaningful learning times and encouraging children’s language)?
- Does the efficacy of ELS@H Bits vary based on characteristics of the educator and caregiver (e.g., prior PD experiences) or the early education and care setting (e.g., setting type or size)?

## Hypotheses

We hypothesize that the ELS@H Bits intervention will have positive impacts on educator and caregiver knowledge, beliefs, and practices related to the two emphasized dimensions of practice. We also expect that ELS@H Bits might be most impactful for educators and caregivers who have the least experience with or access to PD opportunities. In particular, we expect that educators in licensed family child care centers and community-based centers, as opposed to Head Start and public school prekindergarten programs, might be least likely to have access to other PD programs. It is therefore unlikely that these educators and caregivers will have accessed the content of the ELS@H Bits intervention through other means.

## Sample

Participants for this study were drawn from the broader Early Learning Study at Harvard (ELS@H; Jones, Lesaux, Gonzalez, Hanno, & Guzman, in press). ELS@H is a longitudinal study of early learning and care in Massachusetts that is intended to yield results that are representative of the state's population of young children. A sample of 116 early educators and caregivers participating in the second year of ELS@H consented to participate in the ELS@H Bits intervention.

## Methods

After consenting to participate, educators and caregivers were randomly assigned to receive the ELS@H Bits intervention or to a control group receiving no messages. Control group teachers were offered the chance to receive ELS@H Bits messages at a later point in time. A randomization schedule was created prior to recruitment to assign all educators and caregivers in the state, based on publicly available administrative records, to either the treatment or control groups. The randomization schedule was generated using a permuted-block randomization approach to ensure balance across the four types of early education and care settings considered (i.e., licensed family child care, Head Start, community-based centers, and public school prekindergartens; Li, 2011).

Outcome data used to evaluate the efficacy of the ELS@H Bits methods were gathered from two primary sources. First, at the end of the six-week intervention, educators and caregivers were prompted to complete an online survey. In the survey, they provided basic demographic information (i.e., sex, age, education experiences, prior PD experiences), as well as completed assessments related to their knowledge of and beliefs about the targeted practices. Second, information about the practices of educators and caregivers were collected through observations conducted by trained observers visiting the early education and care settings. Both the survey and observations were part of the typical study procedures of the broader Early Learning Study.

## Practice and Policy Implications

The results of this study will contribute to the literature on professional development for early educators and caregivers, as well as to the broader literature on text messaging interventions. If the text messages shift educators' and caregivers' knowledge, beliefs, and practices, it would suggest that using text messaging may offer an additional avenue for supporting early educators and caregivers.

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# Using Behavioral and Design Science to Reduce Administrative Burdens: Evidence from Public Housing

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**Project Funding Years:** 2019–2020

**University Affiliation:** University of Minnesota

## Background and Objectives

This research seeks to use the behavioral and design science literatures to design and study interventions to reduce late payments and evictions for residents in public housing.

While both of these sciences draw heavily from the writings of Herbert Simon (1947, 1968), they have drifted toward different disciplines, picking up the assumptions and methods of their adopted fields. This drift is unfortunate. Behavioral science offers a keen understanding of human behavior, and design offers pragmatic tools to identify system bottlenecks and create the conditions for organizations to learn and change. A design approach may also counter a common criticism that the expert-driven, positivist-informed behavioral sciences fail to understand the actual heuristics used by individuals and the criterion by which they judge success.

## Relevant Behavioral Concepts

By design, the public housing population is vulnerable, with high rates of seniors, individuals with disabilities, refugees, and non-English speaking populations. For our target population, 80 percent of residents are elderly, disabled, or both, and half live on incomes of less than \$10,000 annually. Recent scholarship shows individuals under these conditions are “less likely to weigh long-term consequences and exhibit forward-looking behaviors when threatened, challenged, and depleted” (Mullainathan & Shafir, 2013). In our qualitative work, I similarly found residents that received late payment notices expressed a present bias in seeking help. In public housing, this delay can be devastating—residents can move from up-to-date on rent to homeless in a little more than 60 days. These experiments seek to combat scarcity and present bias by raising the salience of action and reducing procedural frictions. I also employ language that looks to return the locus of control to residents.

## Research Questions

This research seeks to remedy cognitive biases experienced by public housing residents, and also make theoretical and methodological contributions to behavioral science and public administration (Grimmelikhuisen, Jilke, Olsen, & Tummers, 2017).

In that, I will seek to answer: 1) What features of public housing contributed to the a) current choice architecture and b) resident cognitive biases that are associated with negative housing outcomes? 2) How do modifications to the choice architecture emerge and evolve over time through the application of a design-based approach? 3) What impact did the design-based intervention(s) have on eviction actions in public housing? 4) What does combining the tools of behavioral and design science add to our understanding of reducing the administrative burdens?

## Hypotheses

I expect that behaviorally informed interventions will reduce late payments and eviction actions relative to the control condition. Through the inductive work, I anticipate improving our understanding of how design-based science can improve the quality of behaviorally informed interventions.

## Sample

This was a convergent mixed-method design in partnership with a public housing agency in a mid-size Midwestern city. For the experimental design portion, the target of the intervention is 6,500 households in publicly owned buildings. For an automatic withdrawal nudge, I randomized at the building level (10,500 individuals across 46 clusters). For a late-payment reminder nudge, I will randomly send a notice to late payers over the course of three months (estimated  $n = 2,500$ ).

## Methods

I will explore these ideas through a mixed-method study of public housing. By using multiple methods, researchers can better converge on the existing conditions and latent needs of residents (Greene & Benjamin, 2001; Timans, Wouters, & Heilbron, 2019) and “[enhance] our beliefs that the results are valid and not a methodological artifact” (Bouchard Jr, 1976, p. 278; Creswell, 2012). I will use quantitative and qualitative approaches to explore existing organizational choice architecture and residents’ cognitive shortcuts that may be causing undesirable outcomes (Bason, 2017). I will then turn to the behavioral literature to identify actions and bring these ideas to system participants to refine. Finally, using administrative data, I will experimentally test the impact on late payment and evictions actions. Both experiments were pre-registered on the Open Science Framework.

## Practice and Policy Implications

At a basic level, the partnership with public housing intends to make a positive impact on the wellbeing of residents. Through the process, I will also see how a design-based approach can help researchers and practitioners better identify and change the extant choice architecture and resident’s cognitive shortcuts that may be causing undesirable outcomes. Integrating these literatures in the context of administrative burdens (Herd & Moynihan, 2018) and “sludge” (Thaler, 2018) opens fertile theoretical and methodological ground to improve the effectiveness of public interventions.

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