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Title: Tradeoffs for policymakers and parents: How the design of a school shopping website can affect school choices

First choice of conference session: organization of schools and systems

Second choice of conference session: effects of education policies

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Background

School choice has increased dramatically in recent years, but it can only be an effective policy if parents are well informed about their choices. Increasingly, parents turn to school shopping websites, or "school finders," to learn about their options. The content and design of the websites can vary drastically, reflecting a lack of accepted best practices for presenting information about schools (Glazerman, 2017). Policymakers are eager for guidance on how to present information about schools to families, yet few studies have examined the effects of different ways of displaying school information on parents' choices.

Purpose and research questions

Our study investigated the interaction between two types of tradeoffs—those that policymakers and designers make when presenting school choice information and those that parents make when selecting schools. Designers make tradeoffs when creating a school finder, since certain design choices may be helpful to parents in some regards but harmful in others. For example, including a map may be visually appealing but nudges parents toward choosing schools primarily based on distance. Similarly, parents are unlikely to find a school that is optimal on every dimension and will likely need to make tradeoffs when selecting a school. Our study asked: In what ways do variations in how school information is displayed affect parents' school choices, knowledge about schools, and attitudes about the information displays?

Setting and participants

To provide timely results to policymakers, we conducted a quick-turnaround online experiment that parents could complete on their own computers. We purposefully selected parents of school-aged children with less than $40,000 annual household income. The final sample included 3,500 study participants from all 50 states who opted into the survey.

Intervention

We created a hypothetical school district of 16 elementary schools, each with a unique set of characteristics related to academics, safety, resources, and distance from the user's home. We generated the information to create tradeoffs between schools—for example, the school located closest to home had relatively poor academic performance. All parents viewed a school finder website with the same set of schools but with variations in how the schools were presented according to four factors: amount of information, default sort order, format of information, source of information, and inclusion of district averages.

Research design

The experiment consisted of three phases. In part one, participants took an initial survey of screening and background questions. In part two, eligible participants were randomly assigned with equal probability to one variation of the school finder (shown in a separate browser from the survey questions). In total, there were 72 treatment variations used in the experiment, representing every possible combination of the 12 levels of the study's five factors (3x2x2x3x2). In part three, participants completed the endline survey that assessed the three outcomes—school choices, knowledge about the schools, and attitudes about the information displays.

To provide information on school choices, parents selected their top three schools from the list, which revealed the weight parents placed on various categories of information (academics, safety, resources, and distance). To assess knowledge, we included factual questions about schools based on information from the displays. For attitudes, we assessed perceptions of the usability of the displays, drawing from the System Usability Scale (Brooke, 1986).

Analysis

We used a hierarchical Bayesian regression model, which allowed us to test the effects of the 72 display variations and interactions without ignoring or overadjusting for multiple comparisons (Gelman, 2012). The impact model estimated 12 main effects (one effect for each level of the study's five factors) and pairwise interaction effects between displays while controlling for parent and child demographics. We constructed the dependent variables as follows:

- School choices: To measure a parent's preference, we converted the values associated with academics, safety, resources, and distance from home into *z*-scores. We then calculated a weighted average for each characteristic across the three schools selected such that the top-ranked school received double the weight of the second-ranked school, and the second-ranked school received double the weight of the third-ranked school. This resulted in a separate measure of preference for academics, safety, resources, and distance.

- Knowledge: We calculated a total score based on the number of factual questions correctly answered about the schools.

- Attitudes: We calculated separate scores for items assessing ease of use and satisfaction. These factors were selected after reviewing competing factor analytic structures.

Results

The design variations in the study affected parents' school choices, knowledge, and attitudes. We found that even subtle differences in the displays nudged parents toward choosing different types of schools. For example, when schools were initially sorted based on academic proficiency instead of distance, parents selected schools that were farther from home (by more than half a mile) and higher-scoring on standardized tests (by 29 percent of a standard deviation). But the ability to nudge parents towards academic quality came with a tradeoff, as the same parents found the display to be less satisfying and harder to understand.

Conclusions

The analysis shows that the way that school information is presented affects the choices that parents make. Because the results of the study do not provide a uniform recommendation, policymakers will need to determine which outcomes to prioritize within their local contexts—whether nudging parents toward choosing schools with high levels of academic achievement, making sure that parents understand the information, or ensuring that parents are satisfied.

An important limitation of the online experiment concerns generalizability, since the schools were fictitious. In real school choice scenarios, parents would have initial biases about schools before viewing a school finder, which would influence their decision making (Valant, 2014). Future experiments should investigate how design choices influence parents when making decisions about real schools.

References

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