Visually Salient Calorie Labeling: Information Provider or Mere Reminder?

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Introduction

Calorie labeling, an increasingly common policy intervention, has had mixed effects on consumer food choices. In this research, through analyzing the experimental data collected by Urminsky and Goswami, I aim to test if visual salience of the calorie labels, rather than merely information content or format, is the key to reducing calorie. My hypothesis is that effective labeling, more visually salient than standard industry disclosures, works primarily as a reminder, by prompting people to consider nutrition rather than by providing new information.

Literature Review

High levels of obesity (Flegal et al. 2012) have historically had serious consequences for cardiovascular health and mortality (Kramer et al. 2012), accounting for approximately 20% of national medical spending (Cawley and Meyerhoefer, 2012) in the United States. As a result, policy makers in the U.S. have been attempting to reduce obesity by targeting overconsumption of calories (Bray et al. 2012; Swinburn and Ravussin 2009; Cutler et al. 2003). However, there has been a remarkable lack of consensus on which interventions are effective at reducing calorie choices.

Policy interventions in the U.S. have proceeded from the premise that obesity is largely driven by a lack of accurate information (Black 2014), leading to a focus on calorie labeling. However, this reliance on labeling raises the question of whether such interventions are effective at

reducing calorie consumption. A comprehensive review of lab and field studies has found inconsistent results for the effect of calorie labels on reducing calorie choices (Long et al. 2015). Although, on average, menu calorie labeling yielded a significant 18.1 calorie per meal reduction, in-restaurant studies with a control group only demonstrated a statistically nonsignificant 7.6 calorie reduction, and the effect of calorie labeling varied widely across studies.

While recent research has suggested that these weak effects of labeling may be due to people's difficulty in interpreting calories (an abstract unit) and effective labeling interventions may thus need to provide an intuitive basis of comparison, such as equivalent exercise time (Bleich et al. 2013; Dowray et al. 2013), Shen and Urminsky proposed an alternative explanation that the ineffectiveness of certain calorie labeling interventions had little to do with interpretability of the information and was instead caused by the effects of visual salience on decision making (Shen and Urminsky, 2013). Through analyzing the experimental data collected by Urminsky and Goswami in 2015, I try to demonstrate that, informational or not, visually salient calorie labeling will influence people's decision on calorie consumption. My hypothesis is that visual salience plays an import role not only because it ensures information to be noticed, but primarily because it facilitates actively deliberating about cues and incorporating cues into decisions (Weber and Kirsner, 1997). Accordingly, I expect to find that even non-informative "mere-reminders" yield similar results as salient new information.

Data and Methods

The raw data were collected by Urminsky and Goswami in the form of digital receipts through a 9-week field experiment at four on-campus cafeterias at the University of Chicago, namely Gordon Cafe at the Gordon Center for Integrative Science, Harris Cafe at the Harris School of Public Policy, Law School Cafe at the University of Chicago Law School, and Stuart Cafe at the Stuart Hall. During the experiment, calorie labeling was carried out using four sets of signage, 2 of which are informational and 2 of which are "mere reminders". More specifically, Signage 1 offers benchmarking data of the typical calorie content of a meal. Signage 4 is a non-informational counterpart of Signage 1 and asks "Do you know how many Calories are there in your lunch today?". Signage 2 provides information on a very specific selection of products: it has pictures of albacore tuna warps, turkey and gouda wraps, and chicken Caesar salad, with their respective Calories per serving information listed. Signage 3 is a non-informational poster that says "Calorie information is available for many of the pre-packaged items we carry in this cafe". To eliminate the confounding effect of the weeks on the effectiveness of calorie labeling, the four sets of signage are displayed at four on-campus cafes on a rotational basis during the first, third, fifth, and eighth week, each followed by a week of washout period.

While the dataset was collected in 2015, it largely remained unanalyzed due to difficulties in data scraping and cleansing. I will facilitate the research by performing text scraping, data cleansing, as well as data analysis. First, after data scraping and cleansing is completed, I will match the Calorie content information for each sold item using the database at the cafeterias. Following that, the data will be analyzed in several ways. The main analytical strategy for this research will

be OLS and WLS linear regressions, on the receipt-level dataset and the day-level dataset (aggregated from receipt-level data), respectively. First, I will compare average Calories per purchase during weeks with signage display with that during the respective washout periods. According to our assumption, I expect to see a statistically significant decrease in Calorie consumption during the test weeks as compared to the control/washout weeks. Moreover, I will compare the effect of informational Calorie labeling against mere-reminder Calorie labeling. Our hypothesis predicts no statistically significant difference between weeks with display of informational content and those with mere reminders. Last but not least, I will also test for spillover effects of Calorie labeling using data from the washout weeks.

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