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Consumer Willingness to Reduce Food Waste at Home

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Consumer Willingness to Reduce Food Waste At Home

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Introduction

The Food and Agriculture Organization (FAO) stated in 2009 that in order to keep with rising demand for food, global food production must increase by 70% by 2050 (FAO 2009). Still, approximately 30-40% of the total U.S. food supply is wasted (USDA, 2020). Consumers contribute 21% of the total food waste while agricultural producers contribute the remaining 10% (Wilson et al., 2017). Collectively, the societal costs associated with food waste are \$160 billion (Wilson et al., 2017).

Given the enormity of the task of increased productivity, the FAO has introduced a “Target-Measure-Act” system which aims to reduce food loss and waste. The World Resources Institute, 2019, indicated that if food loss and waste can be reduced by 50%, there would be sufficient food availability to feed the population in 2050. The United States Department of Agriculture and the Environmental Protection Agency, in 2015, jointly set forth to reduce the U.S. food waste by 50% by 2030.

Objective

The purpose of this research is to analyze the impact of survey respondent’s (1) food label awareness, (2) frequency of grocery store visits, (3) grocery expenditures as a percent of household income, (4) frequency of eating food past the label date, and (5) demographic characteristics -- specifically: number of kids, marital status, education, and income -- on the respondent’s willingness to reduce in-home food waste.

Data

A series of questions within a nationally representative survey was conducted that asked respondents about their willingness to utilize refrigerated, perishable food that had a defined perish date (specifically: participants were informed the food would spoil in three days). They were presented a set of options (categories) to use all or portions of the remaining food: (1) plan a meal that used 25%, (2) plan a meal that used 50%, (3) plan a meal that used 75%, (4) plan meal that used 100%, (5) donate the food to a pantry by dropping it off requiring 30-minutes, (6) donate the food to a pantry whereby the pantry coordinates a pickup requiring a 2-hour window in the same vein as an in-home service repair. A seventh option of throwing the food away was included as well. The first four options require time commitments via in-home preparation and the food pantry options have defined required time commitments. The second service, pick up, was novel when the survey was being developed, but given the current low-touch societal norms this practice has become more mainstream across many aspects of our daily lives, though we are unaware of this being an actual, viable food pantry option.

Data

A nationally representative panel of 1,000 adults (over the age of 18) were surveyed. Incomplete responses were removed (95 removed, leaving n=905 for analysis). Typical demographic information was collected in addition to the targeted food use questions. Questions relating to food label awareness, in-store purchasing habits, and buyer awareness (for example: primary grocery shopper, amount spent on at-home food) were also a part of the survey design.

Methods

Responses to in-home food use questions introduced in the data section were presented on a 7-point Likert scale (*Strongly Agree, Agree, Somewhat Agree, Neither Agree or Disagree, Somewhat Disagree, Disagree, Strongly Disagree*). An ordered logit regression framework was used where the dependent variable was the respondent response to each *food use* category. To address the research questions, independent variables were: food label awareness (Likert), frequency of grocery store visits, grocery expenditures (%), frequency of eating food past the label date (Likert), role in grocery decisions (%), and demographic information (gender, ethnicity, marital status, number of kids, region of U.S., education, employment status, and income).

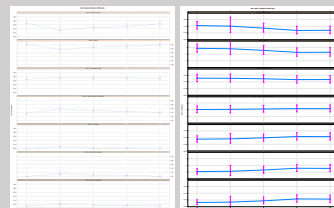
Hypothesis

To address the research objectives, the following hypothesis were tested with the ordered logit regression:

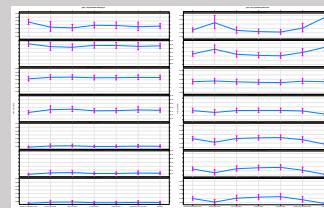
1. Greater label awareness increases the probability of using food.*
 2. Lower frequency of grocery visits increases the probability of using food.*
 3. Higher amount spent on food (relative to income) increases the probability of using food.*
 4. Higher frequency of eating food beyond the suggested label date increases the probability of using food.*
- * And decreases the probability of wasting food.

Results

Results: Objective #1

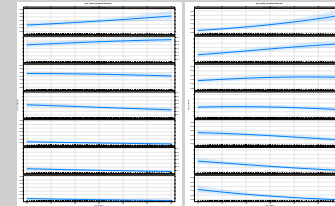


Results: Objective #2

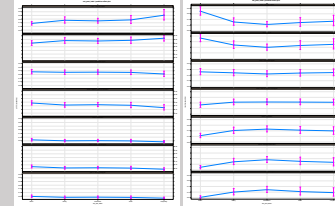


Results

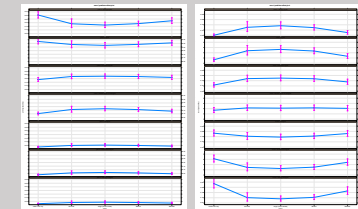
Results: Objective #3



Results: Objective #4



Results: Objective #5



After controlling for respondent food preference and demographics our results support our hypotheses that more attention to label, fewer grocery visits[®], and eating past the label date do lend themselves to more food use and less waste. Increased spending resulted in a higher probability of using food, but our results also indicate that this increased the probability of wasting the food items. Marital status did not have a meaningful impact, however 4 kids or fewer did reveal a high probability of using food, while more than four kids led to increased food waste.

Conclusions

Food waste is an increasingly important issue. Food purchased for in-home consumption was the focus here. Possible policy solutions include incentives for people to not toss and rather use the food item or utilize donation options[®]. Encouraging increased awareness of label dates and education regarding the safety of eating beyond the label date could also reduce the amount of food wasted.

Ramy (2020) found that consumers are willing to pay more for smaller packages to reduce food waste. While this may increase the need to frequently visit the grocery store, but may be offset by less food going unused. Once food is home and it approaches the best by date, the consumer is more than likely to throw it away. With smaller packages, we are less likely to hit that point.

Source: Ramy, 2020 unpublished thesis.

[®] Results do show that visit frequency of once per month also increases the probability of waste.

[®] Donation options were part of the data collected but are not reported here.

Note: Given the space constraint, results are presented for utilizing 50% of the food item and tossing the item in the garbage. Complete results are available upon request (john.m.riley@okstate.edu).

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