

Contributors to Restaurant Food Waste and Barriers to Restaurant Food Donation and Shelter Acceptance

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Abstract

Background: Up to 40% of food produced in America is wasted each year. Meanwhile over 42 million Americans are food insecure. The purposes of this study were to 1) identify contributing factors to local restaurant food waste, 2) describe barriers to restaurant food donations, and 3) describe barriers to donation acceptance by shelter employees.

Methods: Two electronic surveys were distributed to either local restaurant managers/owners or to employees involved in food donation acceptance in local shelters/kitchens following phone calls and/or personal visits by researchers to facilities. Data were coded into and analyzed using SPSS 22.

Results: There was a 17% (N=12/72) and 100% (N=14/14) response rate for restaurants and shelters requested to participate, respectively. While only 16% (n=2) of restaurant survey respondents (RSR) were concerned about food waste in their establishments, all RSR (n=12) agreed that reducing food waste in their facilities was important. Over 83% (n=10) reported having successful food waste prevention measures in their restaurants. There was a positive correlation with report of presence of prevention measures and knowledge of the Good Samaritan Act ($r=.67, p<0.05$). Approximately 42% (n=5) of RSR reported they would be interested in connecting with local shelters to donate food and also agreed that liability is a barrier to safe food donations. Among shelter respondents, 81% (n=9) agreed that their facilities would benefit from excess restaurant food donations.

Conclusion: Although all RSR agreed that food waste prevention measures were important, the majority were not concerned about food waste in their facilities. Due to the overall poor response rates among restaurant owners/managers, the RSR in this survey may represent a segment that was more interested in food waste and more likely to respond to the survey. The majority of respondents of both surveys agreed that partnering with restaurants and shelters for safe excess food donation was desirable.

Background

Forty percent of all food produced in America goes to waste each year because of lack of infrastructure and support in recycling, re-using and waste saving effort (Gunders, 2012). This unparalleled scale of food waste occurs across all levels of the American food supply chain including in production, processing, distribution, consumption and disposal. With over 49 million Americans food insecure, more attention has been drawn on the economic, social and environmental implications of food waste (Vogliano & Brown, 2016). Important research is being conducted on food surplus and preventable food waste to identify and highlight contributing factors. Food waste has multiple hidden implications such as water impact, climate/global greenhouse gas impact, and economic impact.

Methods

The study was approved by the TCU Institutional Review Board. Links to two electronic surveys were distributed to either local restaurant managers/owners or to employees involved in food donation acceptance in local shelters/kitchens following phone calls and/or personal visits by researchers to facilities. Restaurant survey questions addressed service style, average meal cost, facility type (franchise/chain, fast-food, fine dining, café), existence of measures in place at facility to reduce food waste, contributing factors to the facility's food waste, and familiarity with the Federal Bill Emerson Good Samaritan Food Donation Act. Shelter survey questions addressed existence of policies and procedures required to receive food donations, factors that influence ability to accept food donations, and frequency of offered donations. Researchers identified local restaurants and pantries/soup kitchens/shelters within 20 miles of TCU's campus. Restaurant owners/managers and shelter personnel were contacted by phone or in-person to request participation. Consent was obtained from participants prior to survey administration.



Photo from CBS News website.

Table 1: Contributors to Amount of Food Waste at Restaurant

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
Portion sizes (n=12)	16.7%	50.0%	16.7%	8.3%	8.3%
Mislabeled of food products (n=12)	41.7%	33.3%	8.3%	8.3%	8.3%
Storage space (n=12)	33.3%	58.3%	N/A	N/A	8.3%
Lack of Employee/Staff Training (n=12)	33.3%	8.3%	8.3%	33.3%	16.7%
Size of Menu/Number of food items available (n=12)	25.0%	58.3%	N/A	8.3%	8.3%
Complimentary food items (n=12)	25.0%	33.3%	16.7%	8.3%	8.3%
Service Style (n=12)	N/A	41.7%	16.7%	8.3%	8.3%
Food Overproduction (n=12)	16.7%	58.3%	8.3%	8.3%	8.3%
Spoiled Food (n=12)	16.7%	41.7%	N/A	25.0%	16.7%
Consumer Waste (n=12)	8.3%	8.3%	16.7%	41.7%	25.0%
Incorrectly prepared food (n=12)	16.7%	8.3%	16.7%	33.3%	25.0%

Table 2: Barriers to Food Shelters Accepting Food Waste Donations

	A Barrier	Not a Barrier
Lack of storage (dry) (n=11)	27.3%	72.7%
Lack of storage (refrigeration) (n=11)	45.5%	54.5%
Food safety policies (n=11)	72.7%	27.3%
Expiration dates (n=11)	63.6%	36.4%
Insufficient staff (n=11)	18.2%	81.8%
Insufficient volunteers (n=11)	18.2%	81.8%
Transportation of food from restaurant to facility (n=11)	81.8%	18.2%
Maintaining proper temperatures (n=11)	27.3%	72.7%
Number of people being served the food (n=11)	18.2%	81.8%
Lack of notice before receiving food (n=11)	45.5%	54.5%
Lack of space to serve food (n=11)	18.2%	81.8%
Lack of equipment to serve food (n=11)	18.2%	81.8%

Results

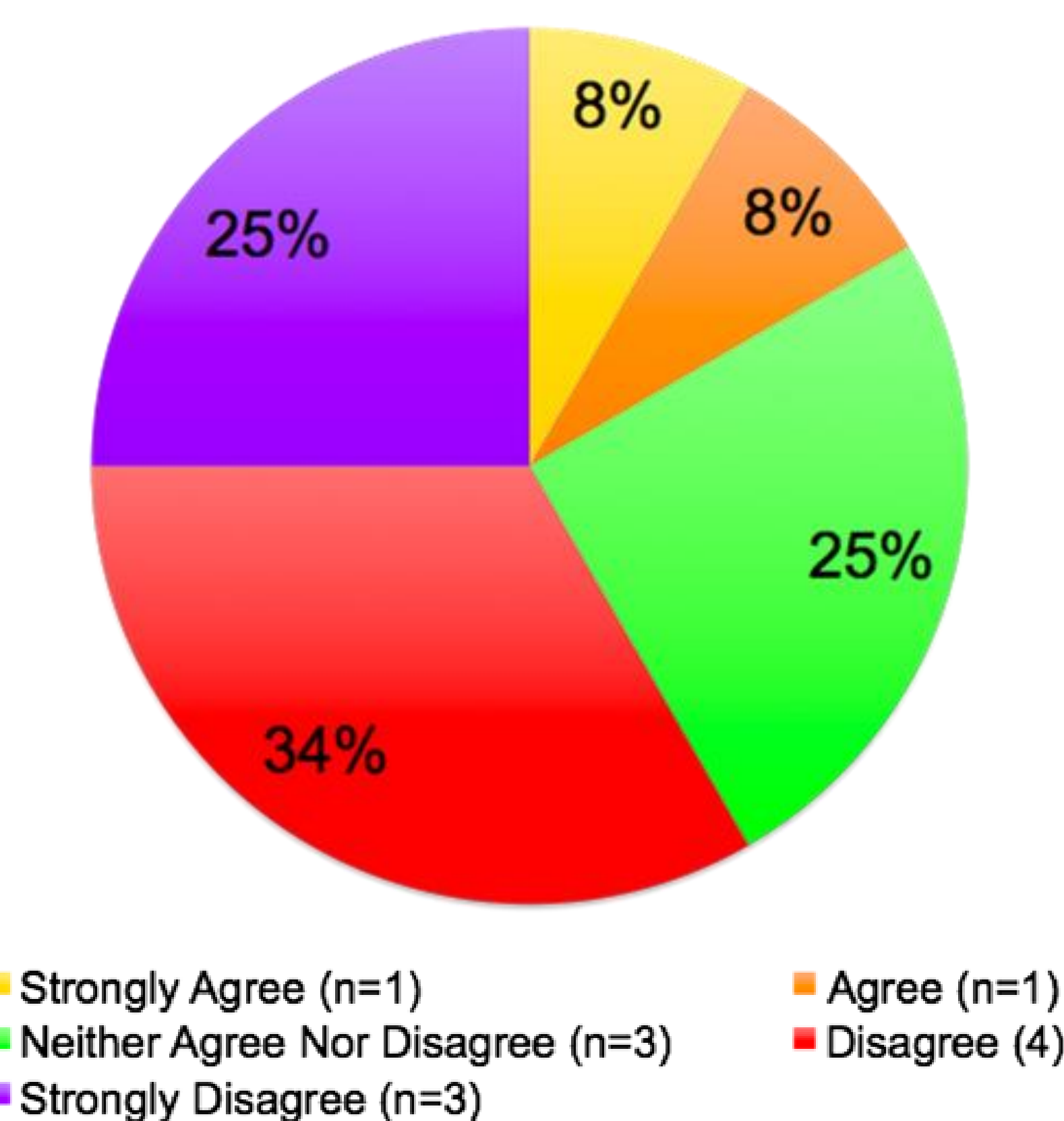
Table one summarizes the percent of RSR that agreed/disagreed that the potential contributors suggested by researchers were causes of food waste in their restaurants. The top three contributors to food waste identified by RSR included lack of employee/staff training, incorrectly prepared food, and consumer waste. Of the 12 respondents, 50% agreed/strongly agreed that lack of employee/staff training is a contributor; 58% agreed/strongly agreed that incorrectly prepared food is a contributor; ~67% agreed/strongly agreed that consumer waste contributes to the amount of food waste. Approximately 67% disagreed/strongly disagreed that their portion sizes contribute to food waste.

Table two summarizes the percent of shelter employees that agreed/disagreed that the barriers suggested by researchers were or were not barriers prohibiting shelter acceptance of food donations. The top three barriers identified by shelter employees to accepting food waste donations included transportation of food from restaurant to facility, food safety policies, and expiration dates. Of the 11 respondents, ~82% reported that transportation is a barrier to accepting food donations; ~73% reported food safety policies are a barrier; ~64% reported that expiration dates are a barrier to accepting donations.

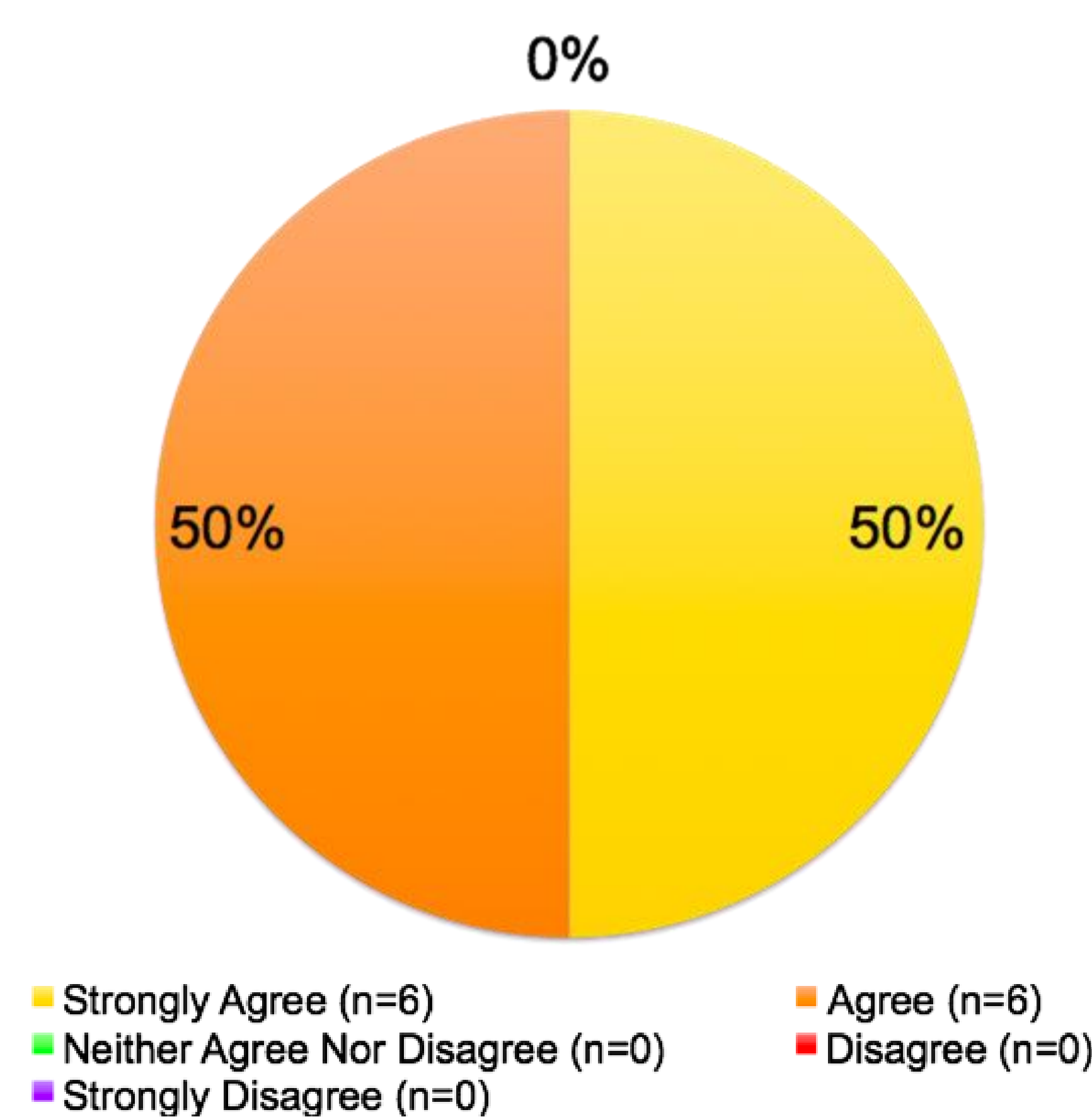
There was a positive correlation with report of presence of prevention measures and knowledge of the Good Samaritan Act ($r=.67, p<0.05$).

Managers'/Owners' Concerns About Food Waste in Their Restaurants

I am concerned about food waste in my restaurant.

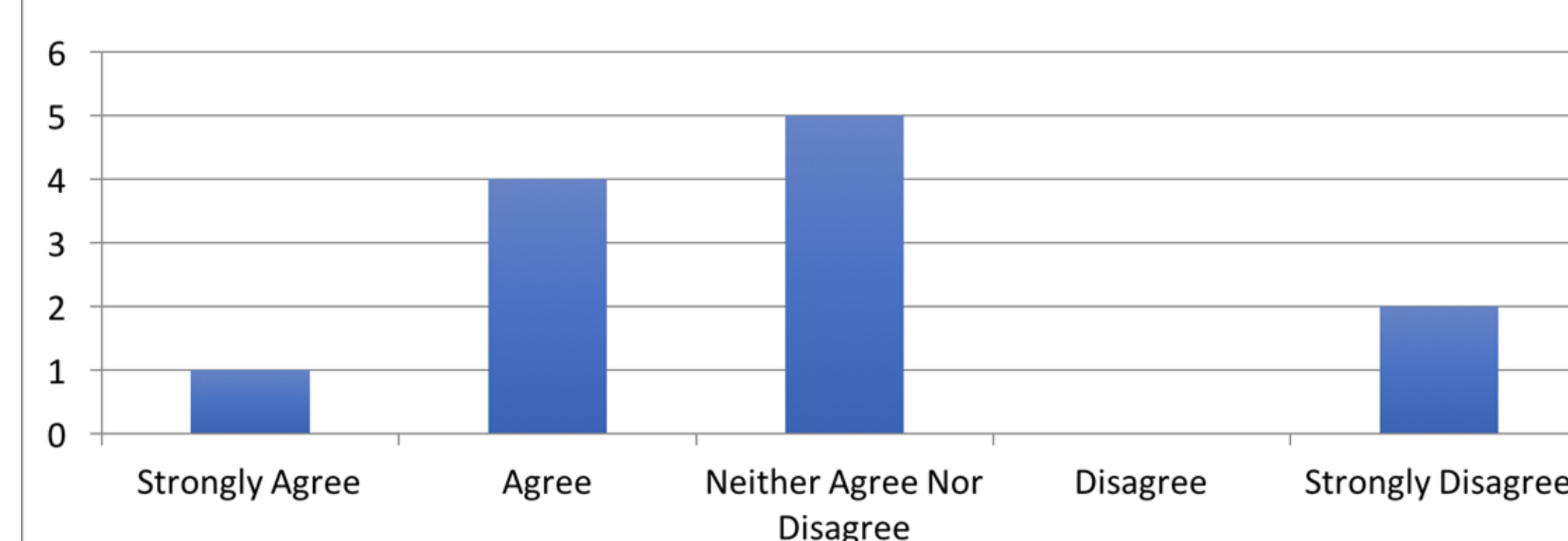


Reducing food waste in my restaurant is important to me.

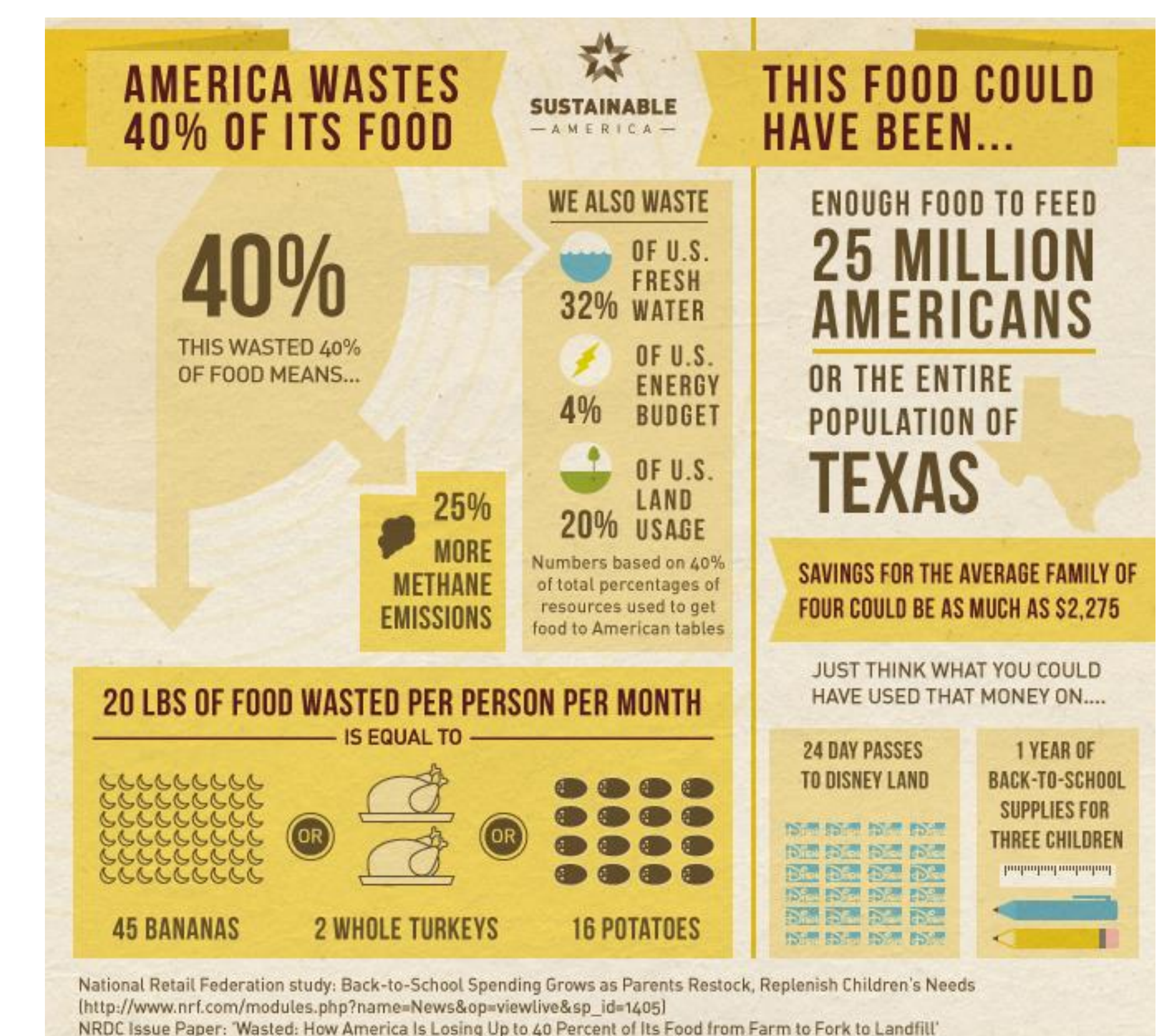
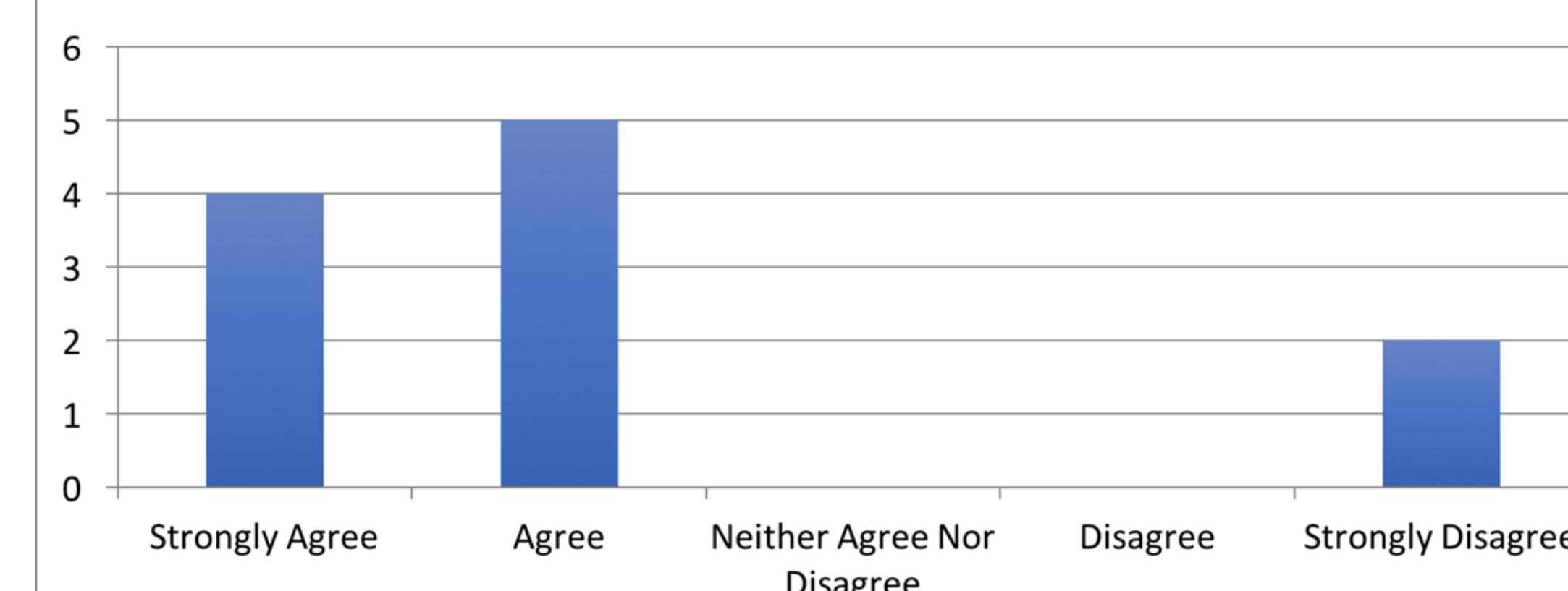


Desire for Food Donation Between Shelters and Restaurants

My restaurant would be interested in connecting with local shelters, soup kitchens or other facilities to donate safe, excess food to those in need.



My establishment would benefit from receiving safe, excess food from restaurants which would otherwise be thrown away.



Conclusions

Although all RSR agreed that food waste prevention measures were important, the majority were not concerned about food waste in their facilities. Due to the overall poor response rates among restaurant owners/managers, the RSR in this survey may represent a segment more interested in food waste and more likely to respond to the survey. Because over 49 million Americans are food insecure, homeless shelters and food pantries would benefit from donations of excess, safe food. Many of these shelters currently accept donations from restaurants but experience barriers with lack of transportation and concerns about food safety and expiration dates. The majority of respondents of shelter surveys agreed that partnering with restaurants and for food donation was desirable. Almost half of RSR expressed an interest in donating their food waste, but noted having little knowledge of how to connect with shelters. Further research is needed to identify solutions to donation barriers that restaurant owners/managers experience, including knowledge of The Good Samaritan Act or familiarity with the available apps and technology to connect their restaurants with shelters in need.