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Consumer Perceptions of Plastic-Free Food Packaging

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Consumer Perceptions of Plastic-Free Food Packaging

By

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Abstract

This study surveyed consumers in Fayetteville, Arkansas to assess their perceptions of plastic-free food packaging. Due to the COVID-19 pandemic, surveys were administered via email to Dale Bumpers College of Agricultural, Food and Life Sciences undergraduate students and faculty at the University of Arkansas. Eleven questions were asked in the survey. Numerical values were assigned to each answer option in order to interpret the results. The factors impacting consumer decisions to purchase foods packaged with or without plastic were ranked from greatest to least: sanitation/safety, availability where shopping, cost, shelf-life, and convenience. Food packaging materials were ranked from most to least likely to purchase by the participants: cardboard, plastic, glass, paper, aluminum/steel, then styrofoam.

Introduction

Background and Need

The United States Environmental Protection Agency (2019) estimated that 14,490 million tons of plastic were created in the United States in 2017. Only 13% of that was recycled; the other 10,130 million tons of plastic were sent to landfills in the United States (EPA, 2019). Plastic packaging is the main contributor to litter in waterways in the U.S., and wildlife are harmed from consuming plastic waste (EPA, 2019). In 2010, an estimated 4.8-12.7 million tons of plastic entered the world's oceans (Jambeck et al., 2015). A study conducted in 2014 estimated that there were 5.25 trillion pieces of plastic in the oceans, weighing 268,940 tons (Eriksen et al.).

Alterations to food packaging could help to lessen plastic waste without compromising food products. Small modifications to food packaging could build awareness within consumers that products do not necessarily need to be packaged in plastic to be fully protected and convenient. Modifications in material, design, and delivery of food products to consumers could reduce plastic waste coming from food packaging. Food packaging must be protective in order to prevent food waste from damaged foods, but changes to packaging could be made without compromising protection or convenience of use (Licciardello, 2017). Modifications could include changing packaging containers to compostable materials, offering a greater selection of foods without packaging, ridding food packaging of unnecessary plastic windows, or using materials that can be repeatedly recycled without degrading such as aluminum or glass (Marsh & Bugusu, 2007).

In 2020, the city of Fayetteville, AR enacted a citywide ban on single-use polystyrene (styrofoam) food packaging products (Citywide Expanded Polystyrene (EPS) Ordinance). This

meant that all food providers in Fayetteville were prevented from vending food packaged in styrofoam. This ordinance is an example of modifying food packaging at a government level in order to be more sustainable. This law, however, has since been redacted in 2021 after the Governor signed legislature banning cities and counties in Arkansas from regulating the containers that restaurants and grocery stores use.

Problem Statement

According to data collected by the EPA, food containers and packaging make up 23% of the waste sent to landfills in the U.S. (n.d.). With millions of tons of plastic entering the oceans and landfills every year, changes to conventional packaging of consumer products could be made to help reduce solid waste (Jambeck et al., 2015). There is a gap in the current research on consumer perceptions of plastic-free packaging. Studies have been conducted to assess consumer perceptions of "eco-friendly" packaging versus quality, as well as their greatest concerns (Lindh, Olsson, & Williams, 2015). However, little has been researched on consumer perceptions of plastic-free packaging. A study conducted by Johnson (1984) is one of the few articles available on consumer attitudes towards purchasing unpackaged foods.

Purpose Statement

The purpose of this study was to assess consumer perceptions of plastic-free alternatives to food packaging. This study surveyed consumers in Fayetteville, Arkansas to determine their perceptions of changing to alternative food packaging to eliminate plastic. Originally, the grocery stores Aldi, Harps, International Grocery, Ozark Natural Foods, Walmart, and Whole Foods were chosen to represent Fayetteville, AR consumers of a variety of demographics. Due to the COVID-19 pandemic, the survey was instead administered via email to the Dale Bumpers

College of Agricultural, Food and Life Sciences undergraduate students and faculty at the University of Arkansas.

Research Objective

- Assess consumer perceptions of transitioning to plastic-free food packaging in Fayetteville, Arkansas.

Research Questions

- To what degree are college students and faculty in Fayetteville, AR likely to purchase foods that are not packaged in plastic?
- Of the following food packaging materials, which are college students and faculty in Fayetteville, AR most likely to purchase?
    - Aluminum/steel, glass, plastic, cardboard, paper, styrofoam
- How do the factors listed rank in affecting the purchasing decisions of college students and faculty in Fayetteville, AR?
    - Availability, convenience, cost, sanitation/safety, shelf-life

Literature Review

The main points of this literature review include former studies conducted on consumer perceptions of food packaging, the purposes of food packaging, and the degradation of plastic. Consumer perceptions are discussed first, and a lack of current research in consumer perceptions of plastic-free packaging is noted. The purpose of food packaging is defined in the following section. The final section details how plastic makes its way into the human food supply.

Previous Consumer Perceptions of Food Packaging Studies

Previous studies have been conducted to assess consumer perceptions of sustainability in food packaging. It has been shown that food packaged sustainably can increase the consumer's

perception of quality (Magnier, Schoormans, & Mugge, 2016). Packaging that appears sustainable has been found to make consumers perceive the quality of that food product to be higher than those in conventional packaging, even when there is not a label present (Magnier et al., 2016). Trends in consumer preferences have shown that consumers are spending less time grocery shopping and preparing food, but prefer foods with fewer preservatives, that are convenient, fresh, and taste good (Han et al., 2018). This evolution of consumer attitudes paired with an expanded distribution of foods has driven a demand for high-quality and safe foods with longer shelf-lives and a reduced environmental toll from food packaging (Han et al., 2018). There is a general lack of understanding of food packaging that can be most efficiently used to minimize environmental effects. Consumers may believe that they are making sustainable purchases based on the material and marketing of the packaging, instead of the sustainability of the production of the food product (Lindh, Olsson, & Williams, 2015). This lack of consumer education can be attributed to multiple barriers of purchasing sustainably packaged food (Grunert, 2011). Currently, the COVID-19 pandemic has shifted consumer behaviors to a greater emphasis on hygiene while grocery shopping (Shamim et al., 2021). A study conducted in 1984 concluded that consumers' greatest concern with packaging-free food products was sanitation (Johnson). Beyond the aforementioned article, there is a lack of research in consumer perceptions of plastic-free food packaging.

The Purpose of Food Packaging

In terms of the environmental impact of waste, food that is lost due to spoilage or damage is considered a greater waste than packaging going to a landfill (Licciardello, 2017). The main function of packaging is to prevent food waste before reaching the consumer, while being attractive enough for the consumer to want to purchase it (Licciardello, 2017). In some cases, it

is more efficient to package the food more heavily due to the high environmental costs that went into making the food product (Williams & Wikström, 2010). Foods like cheese and meat need to have more packaging in order to prevent food waste, but lower impact foods could be modified to contain less packaging. Reducing food packaging would reduce greenhouse gas production by decreasing manufacturing, distribution, and disposal of packaging (Reducing Wasted Food & Packaging, n.d.). Optimizing packaging to be effective in preventing food waste would help to reduce the amount of material needed to package food products as well as the space needed to ship them. If the material could not be modified due to safety or spoilage reasons, decreasing any material found to be in excess would bring down the amount of packaging entering landfills.

Degradation of Plastic

Plastic breaks down into microscopic pieces as it degrades, dispersing into the water and soil that it contacts. In 2017, the United States produced 14.5 million tons of plastic packaging and containers (Containers and Packaging, 2019). Of that 14.5 million tons of plastic produced in the U.S., 10.1 million tons were sent to landfills (Containers and Packaging, 2019). Of the plastic sent to the landfills, an estimated 32% leached into the soil and oceans (Guillard et al., 2018). Whether thrown away, recycled, combusted for energy recovery, or littered, plastic finds its way into the soil or water that every person on Earth relies on for food (Jambeck et al., 2015). Plastic has made its way to the floor of every one of the world's oceans, accumulating from the surface down (Toxicological Threats of Plastic, 2017). It is estimated that plastic makes up 60-80% of the litter polluting the oceans (Derraik, 2002). Chemicals known as persistent, bioaccumulative, and toxic (PBTs) bind to plastic particles (Toxicological Threats of Plastic, 2017). These particles are toxic to humans and wildlife, and they are magnified as they move up food chains to be ingested by humans (Toxicological Threats of Plastic, 2017).

Plastics and other food packaging are currently ubiquitous in the food industry. This literature review revealed that consumers have been found to be positively influenced by sustainable packaging. The data demonstrates that reducing the current amount of packaging in food products could be impactful on reducing waste resulting from the food industry. Finally, the literature suggests that plastic poses a risk to contaminating the food supply.

Methodology

This study used a quantitative approach to survey food consumers in Northwest Arkansas. All undergraduate students and faculty (n = 2,308) in the Bumpers College of Agriculture at the University of Arkansas were emailed a structured survey through Qualtrics. Participants responded on a voluntary basis, and data were collected and analyzed using Qualtrics.

Population and Sampling

Due to COVID-19, the population sampled was altered. It was not possible to survey consumers as they left the grocery store. Therefore, the accessible population shifted to undergraduate students (n = 2150) and faculty (n = 158) of the Dale Bumpers College of Agricultural, Food and Life Sciences at the University of Arkansas (University of Arkansas, n.d.). The population was studied via a census; all undergraduate students and faculty of Bumpers College were given the opportunity to respond. A census includes every person in the population, and participant response is voluntary (*Statistical Language - Census and Sample*, n.d.).

Research Design

A quantitative non-experimental survey design was used to achieve the objectives of the study. Numerical values were assigned to each answer option for data interpretation. Survey

research involves recruitment of participants, data collection, and the utilization of numerous methods of instrumentation for analysis (Ponto, 2015). An online survey was chosen in order to explore the objectives safely in a pandemic, accurately via numerical assignment of answer options, and efficiently as data could be collected and interpreted quickly with minimal manual data entry.

Rigor

The student researcher and committee members reviewed the questionnaire for face and content validity before distribution of the survey. Every undergraduate student (n = 2,150) and faculty member (n = 158) in the Bumpers College of Agriculture was asked to participate in the survey to eliminate selection bias. One survey reminder was sent to increase external validity.

Instrumentation

The questions were developed by the researcher with the guidance of the thesis committee due to the novelty of the study. Eleven questions were included to identify participants' demographics and assess purchasing behaviors and packaging preferences. Question types included closed ended Likert-type statements, multiple-choice, and one fill-in-the-blank. The survey was constructed using Qualtrics software administered via email to allow for data interpretation (Online Survey Platform, 2020).

Data Collection

Institutional Review Board approval was sought and granted prior to beginning data collection (Protocol #2102318192). Data were collected anonymously by sending a survey link via email to every undergraduate student and faculty member in the Bumpers College. The necessary materials for participants to complete the survey included a computer or mobile device and an internet connection. This survey was distributed to Bumpers College undergraduate

students and faculty between March 24, 2021 and April 8, 2021. One reminder email was sent to encourage participation.

Data Analysis

Data were kept in Qualtrics and analyzed using the corresponding Stats IQ program. Descriptive statistics including frequencies, means, and standard deviations were used. Variables were assigned numerical values in order to calculate means and standard deviations in StatsIQ.

Results

A total of 202 survey responses were received (out of a total solicitation of 2,308) for a response rate of only 8.7%. Though the response rate is below the 30% normally obtained during survey research, the researcher was pleased due to the ongoing pandemic. Five responses on two questions were excluded due to irrelevance (Tables 2 & 3). Tables 1-11 depict the responses to the survey questions.

Participant Demographics

Most of the participants were 18-24 years old (66.5%), female (72.0%), white (81.4%), undergraduate students (78.9%), and primarily grocery shop at Walmart (49.1%) (Tables 1-4, 7). The School of Human Environmental Sciences, Agricultural Economics & Agribusiness, Agricultural Education Communication & Technology, and Crop Soil & Environmental Sciences departments represented most of the respondents (Table 5). A variety of majors were represented in the participants (Table 6). The respondents primarily shopped for groceries at Walmart (49.11%), Harps (16.07%), ALDI (11.61%), Whole Foods (8.93%), Other (6.85%), and Ozark Natural Foods (5.95%) (Table 7).

Factors Impacting Decisions to Purchase Foods Packaged in Plastic or Without Plastic

The variables *Unimportant to me, Slightly important to me, Somewhat important to me,* and *Very important to me* were coded, 1-4, respectively in order to determine the mean response to each factor. By mean, the participants ranked the following factors impacting the decision to purchase foods packaged with or without plastic packaging: sanitation/safety (mean=3.24), availability (mean=3.12), cost (mean=3.08), shelf-life (mean=2.85), and convenience (mean=2.76).

Sanitation/Safety

The mean response for sanitation/safety was *Somewhat important to me* (mean=3.24) (std dev=0.88). Sanitation/safety was reported as *Unimportant to me* (3.3%), *Slightly important to me* (19.6%), *Somewhat important to me* (26.6%), and *Very important to me* (50.5%).

Cost

The mean answer for cost was *Somewhat important to me* (mean=3.08) (std dev=0.93). Participants rated cost as *Unimportant to me* (7.1%), *Slightly important to me* (18.0%), *Somewhat important to me* (35.0%), and *Very important to me* (39.9%).

Convenience

The mean for convenience was *Slightly important to me* (mean=2.76) (std dev=0.86). Convenience was ranked as *Unimportant to me* (8.2%), *Slightly important to me* (27.7%), *Somewhat important to me* (44.6%), and *Very important to me* (19.6%).

Shelf-life

The mean response for shelf-life was *Slightly important to me* (mean=2.85) (std dev=0.86). Shelf-life was ranked *Unimportant to me* (6.0%), *Slightly important to me* (27.3%), *Somewhat important to me* (42.1%), and *Very important to me* (24.6%).

Availability

The mean answer for availability was *Somewhat important to me* (mean=3.12) (std dev= 0.85). Availability of food packaged with or without plastic was valued as *Unimportant to me* (4.9%), *Slightly important to me* (16.3%), *Somewhat important to me* (40.8%), and *Very important to me* (38.0%).

Budget

Budget was considered *Somewhat* (37.3%), *Quite a bit* (34.1%), *A little* (23.8%), or *Not at all* (4.9%). The mean answer was *Somewhat* (mean=3.01) (standard deviation=0.88).

Packaging material

The answers to Question 10, *How likely are you to purchase foods wrapped in each of the following materials?*, were coded in order to be analyzed. *Extremely unlikely* was assigned a value of 1, *Somewhat unlikely* was 2, *Neither likely nor unlikely* was 3, *Somewhat likely* was 4, and *Extremely likely* was 5. The participants ranked their likelihood of purchasing the following materials as cardboard (mean= 3.90), plastic (mean= 3.75), glass (mean=3.74), paper (mean=3.72), aluminum/steel (mean=3.13), then styrofoam (2.32) (Table 10). For the no packaging section, the answers to Question 11, *How likely are you to purchase foods without any packaging?,* the answers were coded the same. *Not at all likely* was assigned a value of 1, *Somewhat unlikely* was 2, *Neither likely nor unlikely* was 3, *Somewhat likely* was 4, and *Very likely* was 5.

Styrofoam

Participants rated their likelihood of purchasing styrofoam as *Extremely unlikely* (31.9%), *Somewhat unlikely* (28.1%), *Neither likely nor unlikely* (20.0%), *Somewhat likely* (16.2%), and *Extremely likely* (3.8%) (mean=2.32, std dev=1.19).

Aluminum/steel

The values for aluminum/steel packaging were *Extremely unlikely* (10.3%), *Somewhat unlikely* (21.1%), *Neither likely nor unlikely* (27.0%), *Somewhat likely* (28.6%), and *Extremely likely* (13.0%) (mean=3.13, std dev=1.19).

Glass

For glass, respondents were *Extremely unlikely* (4.9%), *Somewhat unlikely* (10.8%), *Neither likely nor unlikely* (18.9%), *Somewhat likely* (36.2%), and *Extremely likely* (29.2%) (mean=3.74, std dev=1.13).

Plastic

Plastic was *Extremely unlikely (2.7*%), *Somewhat unlikely* (11.9%), *Neither likely nor unlikely* (18.9%), *Somewhat likely* (40.5%), and *Extremely likely* (25.9%) (mean=3.75, std dev=1.05).

Paper

Participants declared their likelihood of purchasing paper food packaging as *Extremely unlikely (2.7*%), *Somewhat unlikely* (8.6%), *Neither likely nor unlikely* (23.8%), *Somewhat likely* (43.8%), and *Extremely likely* (21.1%) (mean=3.72, std dev=0.98).

Cardboard

Finally, cardboard was *Extremely unlikely (1.6*%), *Somewhat unlikely* (6.5%), *Neither likely nor unlikely* (20.7%), *Somewhat likely* (42.9%), and *Extremely likely* (28.3%) (mean=3.90, std dev=0.94).

No Packaging

The participants rated their likelihood of purchasing foods without any packaging as *Not at all likely* (7.6%), *Somewhat unlikely* (17.3%), *Neither likely nor unlikely* (16.8%), *Somewhat likely* (33.0%), and *Very likely* (25.4%) (mean=3.51, std dev=1.25).

Discussion

The participants ranked the factors affecting their decisions to purchase foods packaged with or without plastic packaging, from most to least important as: sanitation/safety, availability, cost, shelf-life, convenience. This aligns with Johnson's 1984 study that found that consumers were most concerned with sanitation for foods without packaging. This ranking could also be affected by the global pandemic and the rise in safety precautions taken while grocery shopping (Shamim et al., 2021). The participants ranking availability as the second highest factor is related to Grunert's barriers of purchasing sustainable foods; consumers may not have the knowledge of what makes food packaging sustainable to be able to discern which foods at their grocery stores are packaged more sustainably (2011). It is interesting that the participants ranked cost below sanitation and availability, because foods that appear to be packaged sustainably are perceived by consumers as higher quality and/or more expensive (Magnier et al., 2016). This result differs from the assumption that, based on those previous studies, cost would greatly affect the likelihood of consumers purchasing foods in plastic-free food packaging.

The participants ranked their likelihood of purchasing the following materials, from most to least likely, as: cardboard, plastic, glass, paper, aluminum/steel, then styrofoam. There is a lack of scholarly research available comparing the overall sustainability of food packaging materials from production to end-of-life (life cycle assessment); including factors such as biodegradability, CO_2 production, natural resource consumption, etc. This is another example of

a barrier to consumers purchasing sustainably packaged foods, because there is not literature widely available for consumers to educate themselves with (Grunert, 2011). Materials such as aluminum, steel, and glass can be recycled indefinitely without reducing the quality of the material, and materials such as paper and cardboard can be recycled into a multitude of paper products (Maine Department of Environmental Protection, n.d.). Meanwhile, plastic can only be recycled with plastic of the same type and process, if it is able to be recycled at all (Maine Department of Environmental Protection, n.d.). This data is important because consumer behaviors drive the market; if consumers buy more foods packaged sustainably, producers will package more foods sustainably (Grunert, 2011).

Due to the study using a census sampling method, correlations cannot be drawn because the participants selected this ranking of purchasing factors and food packaging materials. The reliability of these data is impacted by its population only being undergraduate students and faculty in the Dale Bumpers College of Agricultural, Food and Life Sciences at the University of Arkansas. The sample size of n=202 represents 8.75% of the faculty and undergraduate student population of Bumpers College (University of Arkansas, n.d). There are approximately 29,0005 students and faculty at the University of Arkansas, so this study surveyed 0.70% of the campus population (Quick Facts, 2020).

Conclusion

The goal of this research was to assess consumer perceptions of plastic-free alternatives to food packaging via a survey developed for this purpose. An online survey was used to be able to quantify consumer perceptions. This study indicated that the order of factors affecting the decision to purchase food with or without plastic packaging were sanitation/safety, availability, cost, shelf-life, and convenience, respectively. It found that participants were, in order from most

to least, likely to purchase cardboard, plastic, glass, paper, aluminum/steel, then styrofoam. On average, the participants were neither likely nor unlikely to purchase foods without any packaging. These ranking are significant for the production, manufacturing, distribution, and marketing of food products (Table 10).

RQ 1: To what degree are college students and faculty in Fayetteville, AR likely to purchase foods that are not packaged in plastic?

The participants ranked their likelihood of purchasing the listed materials as cardboard (mean= 3.90), plastic (mean= 3.75), glass (mean=3.74), paper (mean=3.72), aluminum/steel (mean=3.13), then styrofoam (2.32). The mean values for plastic, glass, and paper were within three-hundredths of each other, so the likelihood of purchasing foods packaged in glass or paper were very close to plastic. Participants were between *Neither likely nor unlikely* and *Somewhat likely*, on average, to purchase foods without any packaging.

RQ 2: Of the following food packaging materials, which are college students and faculty in Fayetteville, AR most likely to purchase? (Aluminum/steel, glass, plastic, cardboard, paper, styrofoam)

The students and faculty of Bumpers College ranked food packaging by most likely to purchase to least likely: cardboard, plastic, glass, paper, aluminum/steel, then styrofoam.

RQ 3: How do the factors listed rank in affecting the purchasing decisions of college students and faculty in Fayetteville, AR? (Cost, convenience, sanitation/safety, shelf-life, availability)

Sanitation/safety, availability, cost, shelf-life, convenience made up the ranking of purchasing decisions that most to least affected whether undergraduate students and faculty of Bumpers College bought foods packaged with or without plastic.

Limitations of the Study

The survey questions used provided quantifiable answers to the research questions. Additional questions were needed to specify the perceptions of purchasing plastic specifically. The results of this study cannot be generalized beyond the respondents because a census was used. Time and resources were a constraint in this research.

Recommendations for Future Research

To better understand the implications of these results, future studies could address consumer perceptions and attitudes toward specific sustainable food packaging materials with a larger population representing those independent variables. Future studies could use this survey with an expanded section on perceptions of plastic food packaging. For example, the participants could be asked to self-report their knowledge of the sustainability of the materials in the survey. Pictures of various food packaging could be used for the participants to rate which they are most likely to purchase. This survey could also be used in additional colleges at the University of Arkansas and beyond to be able to generalize and draw correlations from the results of the study.

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Appendix

Survey

1. What is your age?
    a. 18-24 years old
    b. 25-34 years old
    c. 35-44 years old
    d. 45-54 years old
    e. 55-64 years old
    f. 65-74 years old
    g. 75 years or older
2. What is your gender?
    a. Fill in the blank
3. What is your race/ethnicity?
    a. Hispanic or Latino
    b. Black or African American
    c. Native American or American Indian
    d. Asian / Pacific Islander
    e. White
    f. Two or More Races
    g. Other (Fill in the blank)
4. Are you an undergraduate student or faculty member?
    a. Student
    b. Faculty
5. What is your department?
    a. Agricultural Economics & Agribusiness
    b. Agricultural Education, Communication & Technology
    c. Animal Science
    d. Crop, Soil & Environmental Sciences
    e. Entomology & Plant Pathology
    f. Food Science
    g. Horticulture
    h. School of Human Environmental Sciences
    i. Poultry Science
    j. Other (Fill in the blank)
6. What is your major?

a. Agricultural Education, Communication & Technology

b. Animal Science
c. Apparel Merchandising and Product Development
d. Birth Through Kindergarten
e. Crop Science
f. Environmental, Soil and Water Science
g. Food, Nutrition and Health
h. Food Science
i. Horticulture, Landscape and Turf Sciences
j. Hospitality Management
k. Human Development and Family Sciences
l. Human Nutrition and Dietetics
m. Poultry Science
n. Other (Fill in the blank)

7. Where do you primarily shop for groceries? Select all that apply.
    a. Harps
    b. Walmart
    c. ALDI
    d. Ozark Natural Foods
    e. International Grocery
    f. Natural Grocers
    g. Whole Foods
    h. Other (Fill in the blank)
8. Please indicate the degree to which you consider your budget when shopping for groceries.
    a. Not at all
    b. A little
    c. Somewhat
    d. Quite a bit
9. Please indicate the level of importance you place on each of the following factors when deciding whether to purchase foods with or without plastic packaging.

	Convenience	Cost	Shelf-life	Availability where I shop	Sanitation/Safety
Unimportant to me					
Slightly important to me					
Somewhat important to me					

Very important to me					

10. How likely are you to purchase foods wrapped in each of the following materials?

	Styrofoam	Aluminum/steel	Glass	Plastic	Paper	Cardboard
Extremely unlikely						
Somewhat unlikely						
Neither likely nor unlikely						
Somewhat likely						
Extremely likely						

11. How likely are you to purchase foods without any packaging?
    a. Not at all likely
    b. Somewhat unlikely
    c. Neither likely nor unlikely
    d. Somewhat likely
    e. Very likely

Tables

Table 1

Age

Item	*Frequency*	*Percent*
18-24 years old	*128*	*66.5%*
25-34 years old	*14*	*7.2%*
35-44 years old	*16*	*8.2%*
45-54 years old	*13*	*6.7%*
55-64 years old	*14*	*7.2%*
65-74 years old	*7*	*3.6%*
75 years or older	*1*	*0.5%*

Note: n=194

Table 2

Gender

Item	*Frequency*	*Percent*
Female	*136*	*72.0%*
Male	*50*	*26.5%*
Non-binary	*3*	*1.6%*

Note: n=189

Excluded: Attack Helicopter (frequency: 2), 20 (frequency: 1)

Table 3

Race/Ethnicity

Item	*Frequency*	*Percent*
Hispanic or Latino	*10*	*5.2%*
Black or African American	*2*	*1.0%*
Native American or American Indian	*4*	*2.1%*
Asian/Pacific Islander	*5*	*2.6%*
White	*158*	*81.4%*
Other	*1*	*1.5%*
Two or More Races	*12*	*6.2%*

Note: n=191

Other: Middle Eastern (frequency: 1)

Excluded: Apache (frequency: 1), ‘merican (frequency: 1)

Table 4

Undergraduate Student or Faculty Member

Item	*Frequency*	*Percent*
Student	*153*	*78.9%*
Faculty	*41*	*21.1%*

Note: n=194

Table 5

Faculty Department

Item	*Frequency*	*Percent*
Agricultural Economics & Agribusiness	*6*	*15.0%*
Agricultural Education, Communication & Technology	*6*	*15.0%*
Animal Science	*5*	*12.5%*
Crop, Soil & Environmental Sciences	*6*	*15.0%*
Entomology & Plant Pathology	*3*	*7.5%*
Food Science	*3*	*7.5%*
Horticulture	*0*	*0.0%*
School of Human Environmental Sciences	*8*	*20.0%*
Poultry Science	*3*	*7.5%*
Other	*0*	*0.0%*

Note: n=40

Table 6

Undergraduate Major

Item	*Frequency*	*Percent*
Agricultural Business	*13*	*8.5%*
Agricultural Education, Communication & Technology	*6*	*3.9%*
Animal Science	*26*	*17.0%*
Apparel Merchandising & Product Development	*9*	*5.9%*
Birth Through Kindergarten	*3*	*2.0%*
Crop Science	*3*	*2.0%*
Environmental, Soil & Water Science	*17*	*11.1%*
Food, Nutrition & Health	*9*	*5.9%*
Food Science	*5*	*3.3%*
Horticulture, Landscape & Turf Sciences	*12*	*7.8%*
Hospitality Management	*3*	*2.0%*
Human Development & Family Sciences	*12*	*7.8%*
Human Nutrition & Dietetics	*19*	*12.4%*
Poultry Science	*10*	*6.5%*
Other	*6*	*3.9%*

Note: n=153

Other: Poultry Science and Agricultural Leadership, Double Major for Poultry Science & Environmental, Soil and Water Science, Food Science and Marketing double major, Double Majoring in Environmental, Soil, and Water Science and Crop Science, ESWS & POSC, not declared

Table 7

Primary Grocery Shopping Location

Item	*Frequency*	*Percent*
Walmart	*165*	*49.11%*
Harps	*54*	*16.07%*
ALDI	*39*	*11.61%*
Whole Foods	*30*	*8.933%*
Other	*23*	*6.8585%*
Ozark Natural Foods	*20*	*55.9595%*
Natural Grocers	*3*	*0.889%*
International Grocery	*2*	*0.600%*

Other: Sam's Club (frequency: 14), Local (frequency: 1), Kroger (frequency: 1), Sorority House (frequency: 1), Asian Amigo (frequency: 2), Target (frequency: 1), Dillon's (frequency: 1), Allen's (frequency: 1), Hispanic Grocery Stores (frequency: 1)

Table 8

Degree to Which Budget is Considered When Grocery Shopping

Item	*Frequency*	*Percent*
Not at all	*9*	*4.9%*
A little	*44*	*23.8%*
Somewhat	*69*	*37.3%*
Quite a bit	*63*	*34.1%*

Note: n=185

Table 9

Level of Importance Placed on the Following Factors When Deciding Whether to Purchase Foods With or Without Plastic Packaging

	Convenience	*Cost*	*Shelf-life*	*Availability where I shop*	*Sanitation /safety*
Unimportant to me	*8.2%*	*7.1%*	*6.0%*	*4.9%*	*3.3%*
Slightly important to me	*27.7%*	*18.0%*	*27.3%*	*16.3%*	*19.6%*
Somewhat important to me	*44.6%*	*35.0%*	*42.1%*	*40.8%*	*26.6%*
Very important to me	*19.6%*	*39.9%*	*24.6%*	*38.0%*	*50.5%*

Note: n=185

Table 10

Likelihood of Purchasing Foods Wrapped in Each of the Following Materials

	Styrofoam	*Aluminum/ Steel*	*Glass*	*Plastic*	*Paper*	*Cardboard*
Extremely unlikely	*31.9%*	*10.3%*	*4.9%*	*2.7%*	*2.7%*	*1.6%*
Somewhat unlikely	*28.1%*	*21.1%*	*10.8%*	*11.9%*	*8.6%*	*6.5%*
Neither likely nor unlikely	*20.0%*	*27.0%*	*18.9%*	*18.9%*	*23.8%*	*20.7%*
Somewhat likely	*16.2%*	*28.6%*	*36.2%*	*40.5%*	*43.8%*	*42.9%*
Extremely likely	*3.8%*	*13.0%*	*29.2%*	*25.9%*	*21.1%*	*28.3%*

Note: n=185

Table 11

Likelihood of Purchasing Foods Without any Packaging

Not at all likely	*Somewhat unlikely*	*Neither likely nor unlikely*	*Somewhat likely*	*Very likely*
7.6%	*17.3%*	*16.8%*	*33.0%*	*25.4%*

Note: n=185