

University of British Columbia

Social Ecological Economic Development Studies (SEEDS) Sustainability Program

Student Research Report

Bigger isn't always better: Packaging size influences on purchasing behavior and intention

Prepared by: Alden Chang, Amy Lu, Glenda Li, Leyla Dong, Han Zhang, Zoe Liu

Prepared for: UBC Wellbeing & UBC Food Hub

Course Code: PSYC 421

University of British Columbia

Date: 16 April 2023

Disclaimer: "UBC SEEDS Sustainability Program provides students with the opportunity to share the findings of their studies, as well as their opinions, conclusions and recommendations with the UBC community. The reader should bear in mind that this is a student research project and is not an official document of UBC. Furthermore, readers should bear in mind that these reports may not reflect the current status of activities at UBC. We urge you to contact the research persons mentioned in a report or the SEEDS Sustainability Program representative about the current status of the subject matter of a report".



Bigger isn't always better: Packaging size influences on purchasing

behavior and intention

Alden Chang, Amy Lu, Glenda Li, Leyla Dong, Han Zhang, Zoe Liu
Group Name: Lucky Eight!

Department of Psychology, The University of British Columbia

PSYC 421 001: Environmental Psychology

Dr. Jiaying Zhao

April 16, 2023

Executive Summary

This study aimed to determine university students' purchasing intentions based on the packaging size of food products. It was hypothesized that smaller packaged food products would be significantly favored over larger packaged items. A within-group comparison was made for the 155 student participants (M= 21, 68.39% Female) recruited for this online Qualtrics Survey. Of the two conditions, the large packaging size is defined as carrying an amount exceeding 300g, and the small packaging size of food is defined as carrying an amount less than 300g. Participants were randomly asked to indicate which product they would purchase between two sizes of the same 12 products provided from the Food Hub Market. After the survey, participants completed a demographic questionnaire and were shown a debriefing letter. Results were analyzed using a single sample t-test and binomial test, which indicated students' intended to purchase smaller packaged items significantly more than large packaged items, supporting our hypothesis. The study coded for participants' reported reasons of packaging size choices, including frequency of need of the product, price, expiration date, and appearance.

Keywords: purchasing intentions, food insecurity, package size, sustainability, UBC Food Hub Market

Introduction

Food insecurity is a growing concern among students. This situation has also been exacerbated as a result of the pandemic (Jones et al., 2021). Morris et al. (2016) found that food insecurity is related to the financial situation, loan use and living location. Since food insecurity may be related to such factors, this highlights the important role that the UBC Food Hub Market can have on helping ensure food security for students at UBC by increasing food accessibility, diversity, and affordability.

Recent research demonstrates that people prefer large package size products due to having cheaper unit prices and lower cost of goods replacement (Wansink, 1996). However, such research focused on everyday necessities such as liquid laundry that can be easily stored rather than products that can spoil, such as food. Moreover, Koenigsberg's study (2010) found that smaller package sizes improve sales, reduce food waste, and may allow firms to obtain greater profit. Although the small package size products have higher unit prices, the overall price is lower and has less chance to be wasted. Therefore, making the package size more reasonable will be helpful to the student community.

Looking at current understandings, one potential factor that causes food insecurity on campus may be the lack of package size options for food. In contrast to larger companies who focus on profit, the Food Hub Market's main purpose is not profit making but targets food security by providing access to affordable grocery essentials for students at the UBC Vancouver campus. Furthermore, as the Market expands, a more diverse range of packaging sizes, including smaller size packaging may be beneficial to the accessibility and affordability of the products for students.

Despite offering students a more affordable price, the Food Hub Market does not currently provide varying package sizes for the same product. It is also notable that past research focuses on multi-people households with an income, typically families, and seldom reviews students' purchasing behaviors on food. As such, our study aims to close this research gap and focus on university students' purchasing intentions of different packaging sized food items.

Research Question and Hypothesis

The research question for this study is how the packaging sizes of food products influences the purchasing intentions of university students. We hypothesized that the purchasing intentions for smaller packaged products would be significantly greater than larger packaged products.

Methods

Participants

In a power analysis (assuming a minimum effect size=0.25, alpha=0.05, power= 0.8), a target of 128 participants was required for this study (see Appendix B, figure 1). Through distributing the Qualtrics survey on social media platforms and messaging applications, a total of 168 participants were recruited. Having a target population of university students, not limited to the UBC population, data of participants who indicated they were not students or chose not to respond were removed from the analysis. Thus, a total of 155 participants were analyzed, with a mean age of $M=21$ ($SD=1.41$), of whom 68.39% identified as females, 27.10% male, 1.29% non-binary/third gender, 1.29% two-spirit, and 1.94% who prefer not to say (see Appendix B, figure 2).

Conditions

Our independent variable is packaging sizes, with two conditions: large packaging size and small packaging size. Large packaging size is defined as carrying an amount exceeding 300g, and the small packaging size is defined as carrying an amount less than 300g. Among the types of products currently available for sale at the UBC Food Hub Market, 12 products were chosen to be used in the study. The products are rice, salt, sugar, yogurt, bread, butter, cereal, flour, jam, mayonnaise, milk, and peanut butter. Using products from the same brand, we selected large and small packaging sizes of the same product to ask for participants' purchasing intentions. The products' prices are also estimated through the sales prices of products at the Food Hub Market. The unit price of a product is the same, and it is not affected by the package size.

Measures

The dependent variable is the participants' choice of which of the two sizes of products they would like to purchase. Two products from the same brand in different sizes were presented. Participants were asked to indicate on a tick box which one of the two they would purchase. Products were labeled A or B with weight and prices noted below each picture (see Appendix A), and packaging sizes were randomized - 6 products had Product A that showed the small packaging, and 6 products had B that showed the small packaging. Each size was assigned a numeric value which was re-coded in Qualtrics to maintain 1 as the smaller packaged product and 2 as the larger packaged product when analyzing the data. The order of the 12 types of products shown was also randomized. The participants' selection of which product they would purchase was then analyzed to compare between purchasing intentions for larger packaged products versus smaller packaged products.

Procedure

Upon opening the Qualtrics survey, participants were presented with a consent form. Those who did not consent to participate had their study concluded right away and their data was not considered. Those who gave their consent were then provided with instructions about the survey, asking them to select the one product they would purchase among the two shown. This was followed by presenting them with the 12 questions one at a time, each containing two pictures of the same product in different packaging sizes accompanied by the measurement of its amount and price. Participants were asked "Which of these products would you like to purchase?". Being a within-subjects design, all participants were presented with the same 12 questions, though they were randomized for each participant. Participants were required to respond to all 12 questions. After responding to all questions, participants responded to a demographic questionnaire to which they were not required to respond. These questions aimed to gauge participants' age, gender, whether they were a student, living habits, and reasons for their packaging size selections. Finally, participants were presented with a debriefing letter explaining the purpose of the study and a thank you to the participants for having participated. The order and flow of the survey can be seen in Appendix A.

Results

The findings of this study support our hypothesis. The results show that university students are significantly more likely to purchase smaller sized packaged products compared to larger packaged products, and packaging size does influence the purchasing intention of

university students ($M=0.538$, $SD =0.194$, $t(154) =2.418$, $p=0.017$) (see Appendix B, Figure 3). The study ran one sample t-test using the software JASP to analyze data. The one-sample t-test compares the mean of a participant's choice of large packaged products and the choice of small packaged products to 0.5, which is the predetermined value that shows no intention differences for either choice. Since we are analyzing participants' percentage of selecting smaller packaged products, a mean value below 0.5 indicates an intention towards larger packaging size while a mean value above 0.5 indicates an intention towards smaller packaging size. The data shows a mean of 0.538, which means that there is a higher intention in purchasing smaller sized packaged products compared to larger packaged products, with this difference being statistically significant holding a p -value of 0.017.

The study also uses two-tail binomial tests to analyze the purchasing intention of packaging size in each product. In the table (see Appendix B, Figure 4), level 1 represents the small package size and level 2 represents the large package size. For some results it indicates that the purchase intention of participants to buy smaller packages is significant in salt ($N = 155$, $proportion = 0.684$, $p <0.001$), jam ($N = 155$, $proportion = 0.781$, $p <0.001$), mayonnaise ($N = 155$, $proportion = 0.723$, $p <0.001$), peanut butter ($N = 155$, $proportion = 0.813$, $p <0.001$), and butter ($N = 155$, $proportion = 0.671$, $p <0.001$). Also, in the product of bread ($N = 155$, $proportion = 0.355$, $p <0.001$), cereal ($N = 155$, $proportion = 0.284$, $p <0.001$), milk ($N = 155$, $proportion = 0.219$, $p <0.001$), shows significant purchase intention in larger packages size than smaller package size. The remaining four products, rice, sugar, yogurt, and flour did not show significant differences in purchase intention.

Participants reported there are some factors that influenced their purchase intention. After coding participants' responses, it was found that those factors were: frequency needed for the product (53%), product price (25%), product expiration date (13%), product appearance (4%), don't want to waste food (2%), room of storage (2%), and consider the distance between home and supermarket (1%) (see Appendix B, Figure 5).

Discussion

The data from our 12-question analysis suggests that packaging size does influence university students' purchasing intention, with significant influences for specific food products. Based on the coded factors that influence participants' purchasing intentions, results suggest consumers place a high value on the practical considerations of product usage and cost, along with concerns about food and product freshness and storage.

Our data suggest that students prefer the larger size for products like bread, cereal, and milk. These products can be classified as staple food products. Staple foods are typically consumed regularly and in large quantities. This indicates students may value the larger packaging of these products due to their high frequency of consumption, cost efficiency, convenience, and potential for waste reduction.

In contrast, our data for products like salt, butter, jam, mayonnaise, and peanut butter indicate a significantly higher purchasing intention for smaller sized packages. These products can be classified as condiments, spreads, and flavorings. Based on the factors that influenced purchasing intention, results suggest students have a priority for product pricing, freshness over quantity, food waste prevention, product expiration and convenience of storage for these products. While larger packaging may offer a lower unit price, the smaller packages are more

accessible for students with their reduced upfront cost. 53% of participants indicated the frequency of the need for the product as the most influential factor in their purchasing intentions. This suggests these products are not consumed in high frequency or quantity. 2% of participants indicated food waste prevention led to their purchasing intention. This suggests that smaller packaging for products like butter, jam and peanut butter are preferred as they can help consumers control portion sizes and prevent waste. Finally, with 2% of participants indicating room of storage as a factor for their purchasing intention, this suggests smaller packaging is preferred for these items as they provide the convenience of easy storage, transportation, and handling, particularly in single-person households or students with smaller refrigerators and cabinets.

The results for rice, sugar, yogurt, and flour did not show a significant difference in purchasing intention between smaller and larger packaging. This suggests that other factors, such as brand preference, taste, and nutritional value may be more influential than packaging size in purchasing decisions for students. Future research could explore these potential factors and their influence on the purchasing intentions for different types of food products.

Some potential limitations of this study include sampling bias, as our sample size was only 155 students from varying universities with a majority being female participants. Additionally, the recruitment method of this study, using social media platforms and messaging applications, limits the demographic of participants to friends and acquaintances of the researchers and students of similar geographic location, education level and socio-economic background. Therefore, to improve the external validity or test the reliability of the results in other situations, further recruitment methods should be explored and a larger sample size with a more diverse demographic of students would increase the generalizability of the findings, improving the statistical power of the analysis.

Another limitation of the study is the poor realism to the purchasing intentions experience. This study only included a limited range of products, the majority being carbohydrates and western branded products which may influence the generalizability of the findings to other products not included in the study. The Qualtrics survey does not capture the reality of purchasing products from a market, as this method only compares two packaging sizes from which they are able to choose rather than the more extensive choices they may have. As a result, further studies should consider using further qualitative insight in conjunction to provide a more comprehensive understanding of the factors that influence consumer behavior.

Exploring different methods to obtain results for this research question would provide better realism of the purchasing experience and provide insight into the potential implications of environmental sustainability of packaging size for certain products. Furthermore, the improvements in this study could benefit human well-being by understanding the specific factors that influence purchasing behavior, allowing stakeholders to use the information for more effective marketing strategies to promote healthier and more sustainable food choices. In addition, the findings of staple and convenient foods amongst students may suggest a need for more education and resources on more nutritious food options, which could ultimately improve the overall health and well-being of a larger population.

Recommendations

For the UBC community and the Food Hub Market, our project provides helpful information into the influence of packaging size on purchasing intentions and the role of other factors in the decision-making process, supporting them in making informed choices about the food supply, consumer behavior, and sustainable development planning. Choosing package sizes that correspond to usage frequency minimizes food waste on campus since students are more likely to consume the entire item before it expires or spoils, resulting in less waste. This contributes to a more sustainable food system at UBC, supporting its Zero Waste Action Plan (2022), and contributes to the university's sustainable development goals.

Furthermore, our research shows that choosing package size purchasing intentions is also affected by pricing variables. Due to more affordable upfront costs, smaller packaging sizes are more appealing to consumers who use products less frequently, need freshness, and have limited storage space and money. Thus, smaller packaged product options at a lower cost can be more accessible and affordable for students with limited budgets, lessen their financial burden, and enable students of different economic statuses to obtain food more efficiently. We recommend the Food Hub Market reduce unit costs and equalize prices for smaller packages with that of larger packages. Currently, instead of purchasing small packages of rice from suppliers, the Food Hub Market buys large rice packages from the manufacturers to repackage into smaller packages to sell. This strategy could be extended to a wide range of items, allowing the Food Hub Market to reduce the difference in unit prices and provide affordable prices for smaller-sized packaging in a variety of product categories. Applying this strategy to more items may also promote more sustainable consumption, as students are less influenced by price when choosing smaller packaging sizes and encourage students to diversify their food choices, as they can try different products without having to commit to buying large quantities.

We also recommend that UBC and the Food Hub Market adapt their food offerings to student preferences, consider different consumer needs, budgets, and product types, and offer a variety of package sizes to meet different usage frequencies and purchasing capacities to help increase food accessibility and satisfy consumers' needs. The results of our study revealed that while a small percentage of students (2%) took food waste into account when deciding on the size of food packages to purchase, this consideration was relatively minor. It seems that factors such as frequency of use, price, and shelf life are still the main determinants in students' decision-making process. However, it is worth mentioning that the frequency of usage may be related to concerns about food waste, as students may choose smaller packets to prevent not being able to consume the contents. UBC and the Food Hub Market may adopt activities, including informing students about the negative consequences of buying greater quantities of food than needed and emphasizing the value of not wasting food to raise their knowledge of food waste. According to Petit et al. (2020), consumers may be more likely to select smaller packages when they are aware of the negative consequences that food waste has on society. By implementing these recommendations, the Food Hub Market can provide affordable and accessible products, a variety of choices and good customer service, creating an enjoyable, convenient, and environmentally sustainable shopping environment for students.

References

- Jones, H. E., Manze, M. G., Ngo, V. K., Lamberson, P., & Freudenberg, N. (2021). The Impact of the COVID-19 Pandemic on College Students' Health and Financial Stability in New York City: Findings from a Population-Based Sample of City University of New York (CUNY) Students. *Journal of Urban Health-bulletin of the New York Academy of Medicine*, 98(2), 187–196. <https://doi.org/10.1007/s11524-020-00506-x>
- Koenigsberg, O., Kohli, R., & Montoya, R. (2010). Package Size Decisions. *Management Science*, 56(3), 485–494. <http://www.jstor.org/stable/27784128>
- Morris, L. M., Smith, S., Davis, J., & Null, D. B. (2016). The Prevalence of Food Security and Insecurity Among Illinois University Students. *Journal of Nutrition Education and Behavior*, 48(6), 376-382.e1. <https://doi.org/10.1016/j.jneb.2016.03.013>
- Petit, O., Lunardo, R., & Richards, T. J. (2020). Small is beautiful: The role of anticipated food waste in consumers' avoidance of large packages. *Journal of Business Research*, 113, 326–336. <https://doi.org/10.1016/j.jbusres.2019.10.003>
- Wansink, B. (1996). Can Package Size Accelerate Usage Volume? *Journal of Marketing*, 60(3), 1. <https://doi.org/10.2307/1251838>
- Zero Waste Action Plan*. (2022, May 6). [sustain.ubc.ca](https://www.sustain.ubc.ca).
<https://www.sustain.ubc.ca/campus/recycling-waste/zero-waste-action-plan>

Appendix A

2023/4/3 16:30

Qualtrics Survey Software



Consent Letter

Consent Form

Class Research Projects in PSYC 421 - Environmental Psychology

Principal Investigator: Dr. Jiaying Zhao

Course Instructor

Department of Psychology

Institute for Resources, Environment and Sustainability

Email: jiayingz@psych.ubc.ca

Introduction and Purpose

Students in the PSYC 421 – Environment Psychology class are required to complete a research project on the UBC campus as part of their course credit. In this class, students are required to write up a research proposal, conduct a research project, collect and analyze data, present their findings in class, and submit a final report. Their final reports will be published on the SEEDS online library (<https://sustain.ubc.ca/teaching-applied-learning/seeds-sustainability-program>). Their projects include online surveys and experiments on a variety of sustainability topics, such as waste sorting on campus, student health and wellbeing, food consumption and diet, transportation, biodiversity perception, and exercise habits. The goal of the project is to train students to learn research techniques, how to work in teams and work with UBC clients selected by the UBC SEEDS (Social Ecological Economic Development Studies) program.

Study Procedures

If you agree to participate, the study will take about 10 minutes of your time. You will answer a few questions in the study. The data will be strictly anonymous. Your participation is entirely voluntary, and you can withdraw at any point without any penalty. Your data in the study will be recorded (e.g., any answer you give) for data analysis purposes. If you are not sure about any instructions, please do not hesitate to ask. Your data will only be

2023/4/3 16:30

Qualtrics Survey Software

used for student projects in the class. There are no risks associated with participating in this experiment.

Confidentiality

Your identity will be kept strictly confidential. All documents will be identified only by code number and kept in a locked filing cabinet. You will not be identified by name in any reports of the completed study. Data that will be kept on a computer hard disk will also be identified only by code number and will be encrypted and password protected so that only the principal investigator and course instructor, Dr. Jiaying Zhao and the teaching assistants will have access to it. Following the completion of the study, the data will be transferred to an encrypted and password protected hard drive and stored in a locked filing cabinet. Please note that the results of this study will be used to write a report which is published on the SEEDS library.

Remuneration

There is no remuneration for your participation.

Contact for information about the study

This study is being conducted by Dr. Jiaying Zhao, the principal investigator. Please contact her if you have any questions about this study. Dr. Zhao may be reached at (604) 827-2203 or jiayingz@psych.ubc.ca.

Contact for concerns about the rights of research subjects

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

Consent: Your participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time. You also may postpone your decision to participate for 24 hours. You have the right to choose to not answer some or any of the questions. By clicking the "continue" button, you are indicating your consent to participate; hence, your signature is not required. The researchers encourage you to keep this information sheet for your records. Please feel free to ask the investigators any additional questions that you have about the study.

Ethics ID: H17-02929

Yes, I consent to participate in this study and will continue with the experiment.

2023/4/3 16:30

Qualtrics Survey Software

No, I do not consent to participate in this study.

Block 4

In part 1, you will choose your purchasing preferences on different sizes of the same item.
(If you are using a mobile phone, **FLIP** your phone **HORIZONTALLY** for a better viewing experience)

Follow the question prompt, and select the product you would prefer to purchase.
The quantity and prices of each item are listed below the pictures.

Matrix questions

Which of these products would you like to purchase?

	Rice	
A		B
		
4.5kg- \$19.5		300g- \$1.46
<input type="radio"/>		<input type="radio"/>

2023/4/3 16:30

Qualtrics Survey Software

Which of these products would you like to purchase?

Salt

<p>A</p>  <p>300g- \$0.6</p> <p><input type="radio"/></p>	<p>B</p>  <p>1kg- \$2</p> <p><input type="radio"/></p>
--	---

Which of these products would you like to purchase?

Sugar


<p>A</p>  <p>1.81kg- \$7.08</p> <p><input type="radio"/></p>	<p>B</p>  <p>300g- \$1.17</p> <p><input type="radio"/></p>
---	---

2023/4/3 16:30

Qualtrics Survey Software



Which of these products would you like to purchase?

Yogurt

<p>A</p>  <p>100g- \$0.96</p> <p><input type="radio"/></p>	<p>B</p>  <p>700g- \$6.7</p> <p><input type="radio"/></p>
---	--

Which of these products would you like to purchase?

Bread

<p>A</p>  <p>600g- \$4.49</p> <p><input type="radio"/></p>	<p>B</p>  <p>40g- \$0.29</p> <p><input type="radio"/></p>
---	--

2023/4/3 16:30

Qualtrics Survey Software


Which of these products would you like to purchase?

Butter

<p>A</p>  <p>100g- \$1.44</p> <p style="text-align: center;"><input type="radio"/></p>	<p>B</p>  <p>454g- \$6.54</p> <p style="text-align: center;"><input type="radio"/></p>
---	--

Which of these products would you like to purchase?

Cereal

<p>A</p>  <p>500g- \$7.5</p> <p style="text-align: center;"><input type="radio"/></p>	<p>B</p>  <p>50g - \$0.75</p> <p style="text-align: center;"><input type="radio"/></p>
--	---

2023/4/3 16:30

Qualtrics Survey Software

Which of these products would you like to purchase?

Flour

<p>A</p>  <p>300g- \$0.76</p> <p style="text-align: center;"><input type="radio"/></p>	<p>B</p>  <p>2.5 kg- \$6.3</p> <p style="text-align: center;"><input type="radio"/></p>
---	--

Which of these products would you like to purchase?

Jam

<p>A</p>  <p>500g- \$3.25</p> <p style="text-align: center;"><input type="radio"/></p>	<p>B</p>  <p>100g- \$0.65</p> <p style="text-align: center;"><input type="radio"/></p>
---	---

2023/4/3 16:30

Qualtrics Survey Software

Which of these products would you like to purchase?

Mayonnaise

<p>A</p>  <p>275ml- \$1.73</p> <p style="text-align: center;"><input type="radio"/></p>	<p>B</p>  <p>475ml- \$2.99</p> <p style="text-align: center;"><input type="radio"/></p>
--	--

Which of these products would you like to purchase?

Milk

<p>A</p>  <p>2L - \$5.5</p> <p style="text-align: center;"><input type="radio"/></p>	<p>B</p>  <p>250ml - \$1.25</p> <p style="text-align: center;"><input type="radio"/></p>
---	---

2023/4/3 16:30

Qualtrics Survey Software

Which of these products would you like to purchase?

Peanut Butter B

A



300g- \$2.76



1kg- \$9.2

Block 5

Well done! Part 1 is now finished!
We are now moving onto the last part.

Demographic questions

What is your age?

2023/4/3 16:30

Qualtrics Survey Software

How do you describe your gender?

- Male
- Female
- Non-binary / third gender
- Two-spirit
- Prefer not to say

Are you a student?

- No
- Yes

How many people do you currently live with?

- alone
- 2 people
- 3 people
- < 5 people
- >5 people

How frequently do you cook?

- Very Often
- Sometimes

2023/4/3 16:30

Qualtrics Survey Software

- Not Often
- Never

How often you go to the grocery store?

- Monthly
- Biweekly
- Weekly
- Multiple times a week

What is your average cost for food per month?

- Under \$100
- \$100-\$200
- \$200-\$300
- \$300-\$400
- \$400-\$500
- Above \$500

Are you currently experiencing food insecurity?

- | | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Definitely
not | Probably not | Might or
might not | Probably
yes | Definitely
yes |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

What is the reason(s) of your choices in product size?

2023/4/3 16:30

Qualtrics Survey Software



Block 3

Debriefing letter

PSYC 421 001 Environmental Psychology Team Research Project:

Bigger isn't always better: Packaging size's influences on purchasing behaviour

Dear participant,

Thank you for your participation in our recent survey. Your willingness to take part in this study and provide us with your opinions is greatly appreciated.

This survey aimed to gather information about consumer preferences for package sizes when purchasing food items. Your task was to indicate your preference for either large or small packaged products and provide us with your reasoning for your choice. We hope to use the data collected to inform further research and explore potential solutions to address critical issues such as food accessibility and security.

We want to thank you again for taking the time to complete the survey. Your input has been invaluable and will help us better understand consumer preferences and the factors that influence them.

Powered by Qualtrics

Appendix B

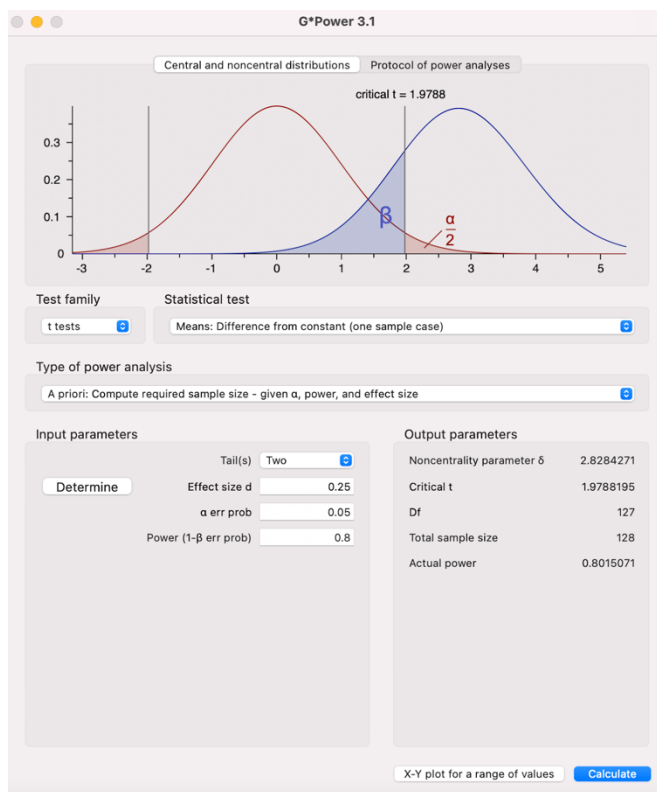


Figure 1: G Power participant sample size analysis: One-sample t-test, Within-subjects design

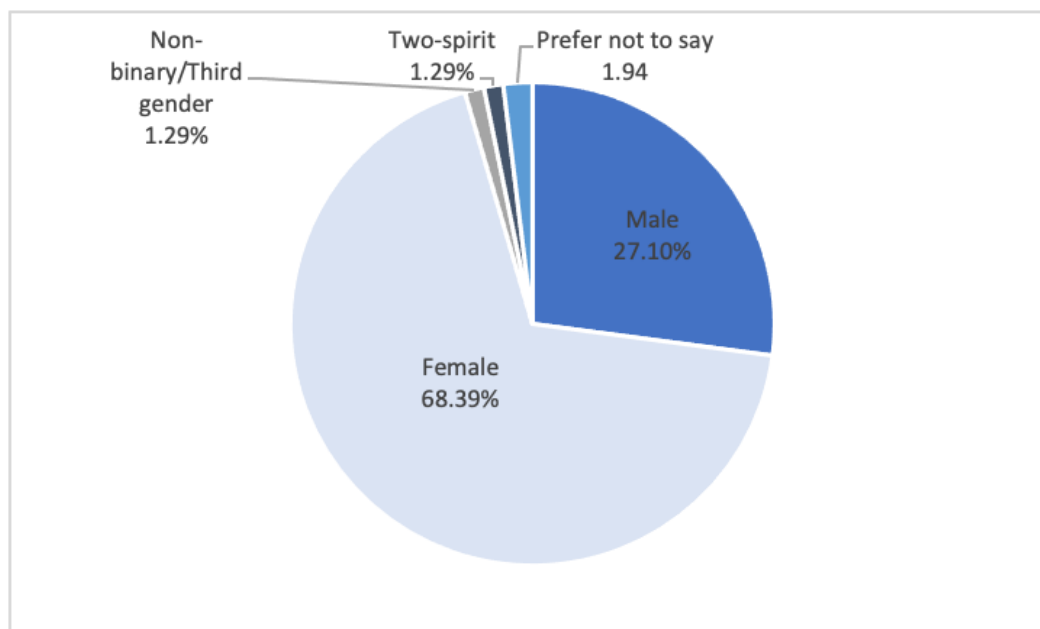


Figure 2: Participant gender distribution

One Sample T-Test ▼

One Sample T-Test

	t	df	p	Cohen's d	SE Cohen's d
S1	2.418	154	0.017	0.194	0.081

Note. For the Student t-test, effect size is given by Cohen's *d*.

Note. For the Student t-test, the alternative hypothesis specifies that the mean is different from 0.5.

Note. Student's t-test.

Descriptives ▼

Descriptives

	N	Mean	SD	SE	Coefficient of variation
S1	155	0.538	0.194	0.016	0.360

Raincloud Plots

S1

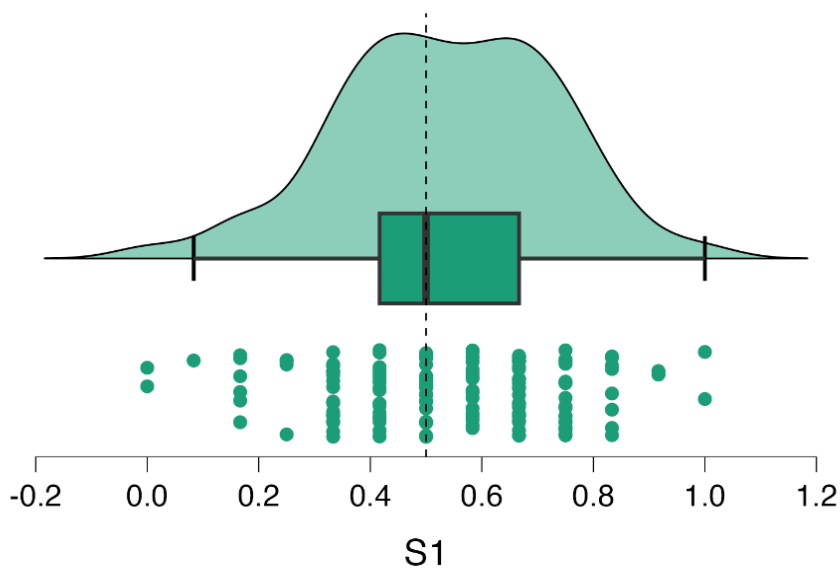


Figure 3: One sample t-test

Binomial Test

Binomial Test					
Variable	Level	Counts	Total	Proportion	p
Rice	1	72	155	0.465	0.422
	2	83	155	0.535	0.422
Salt	1	106	155	0.684	< .001
	2	49	155	0.316	< .001
Sugar	1	66	155	0.426	0.077
	2	89	155	0.574	0.077
Yogurt	1	76	155	0.490	0.872
	2	79	155	0.510	0.872
Bread	1	55	155	0.355	< .001
	2	100	155	0.645	< .001
Butter	1	104	155	0.671	< .001
	2	51	155	0.329	< .001
Cereal	1	44	155	0.284	< .001
	2	111	155	0.716	< .001
Flour	1	84	155	0.542	0.335
	2	71	155	0.458	0.335
Jam	1	121	155	0.781	< .001
	2	34	155	0.219	< .001
Mayonnaise	1	112	155	0.723	< .001
	2	43	155	0.277	< .001
Milk	1	34	155	0.219	< .001
	2	121	155	0.781	< .001
Peanut Butter	1	126	155	0.813	< .001
	2	29	155	0.187	< .001

Note. Proportions tested against value: 0.5.

Figure 4: Binomial Test

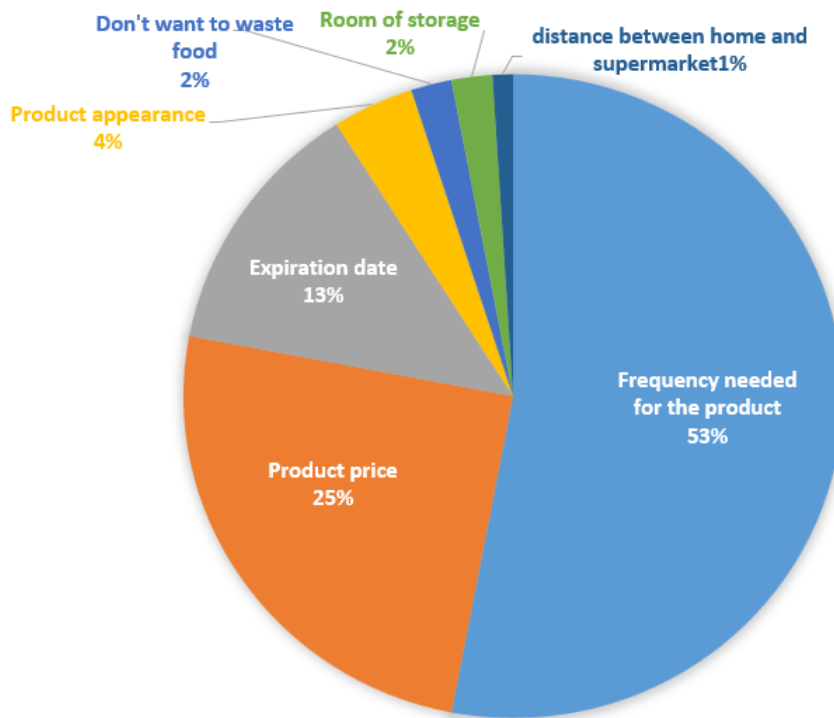


Figure 5: Factors that influenced participants' purchase intention.

Appendix C

Contribution of Group Members

Proposal	All group members worked together to create the group name, the research question, and the hypothesis. Alden Chang, Leyla Dong, Zoe Liu, and Glenda Li conducted a literature review of relevant articles. Alden Chang and Amy Lu wrote the Background Literature. Zoe Liu wrote the participant sample & sample size and conditions. Alden Chang wrote the measures and Han Zhang wrote the statistical analyses. Amy Lu wrote the anticipated outcomes. Leyla Dong created the survey questions and organized the appendix.
Data collection & analysis	All members shared the survey with their contacts through social media. Alden Chang and Leyla Dong conducted data analysis with JASP.
Presentation	All members contributed to making the slide deck and presenting the corresponding slides that they made.
Final report	Han Zhang wrote the executive summary and introduction section. Alden Chang wrote the methods section. Zoe Liu and Glenda Li wrote the results section. Amy Lu wrote the discussions section. Leyla Dong wrote the client recommendations. Alden Chang, Glenda Li, Leyla Dong, and Zoe Liu compiled the appendices. All members worked together to revise all sections of this final report.