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Student Research Report

Coffee Tabled: Nudging Consumers Towards Choosing Tea Over Coffee

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Coffee Tabled: Nudging Consumers Towards Choosing Tea Over Coffee

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Executive Summary

The question we wanted to address is what kind of label is most effective in changing people's decision-making when choosing between tea and coffee? This would provide us with useful insight into what specific elements on environmentally-friendly labels ignited consumers to choose tea over coffee. Our study featured a survey, where it first asks whether the respondent is a coffee or tea drinker. In order to obtain participants, we utilized a snowball-sampling method, where we reached out and shared the survey with our peers through online chat groups and requested them to share our survey with their peers. We ended up having 153 participants. They were randomly placed in conditions consisting of labels that evoke personal feelings regarding climate change, a sense of belonging to the college community, and a checklist of the environmental benefits of drinking tea. We hypothesized that the checklist condition would be the most successful in convincing participants to select tea. In the end, our hypothesis was supported by the findings from the survey.

Introduction

Each of us makes several product-related decisions daily, most of which are centred around food and beverages. While the vast majority of people have pre-determined, tried and tested brands and products that they choose to consume, we are oftentimes swayed away from our regular purchases through intelligently designed nudges. Nudges are aspects of choice architecture, often used in grocery store settings, that predictably alter consumer behaviour without eliminating any options or significantly changing economic incentives (Leonard, 2008). We decided to utilize this concept in manipulating the choice architecture for participants when choosing between tea and coffee as a preferred beverages of choice. We chose to study coffee as it is an environmentally unsustainable product that is consumed in large amounts daily by millions of people worldwide (Olekalns & Bardsley, 1996). We wanted to test whether we could design effective nudges in the form of labels to alter coffee drinkers' purchase behaviour and get them to pick the far more sustainable green tea over their preferred coffee.

A review examining the relationship between "consumer behaviour and climate change" found informative assistance as a consequential factor in choosing sustainable options (Thøgersen, 2021). Adding a carbon footprint label with a small message about the benefits of choosing sustainable options is enough to persuade many. Another review from White et al (2019), discusses SHIFT, which explains the disconnect between consumers' positively evaluating pro-environmental behaviours and lack of involvement. SHIFT suggests that for people to choose sustainable products, they have to feel as if others are doing the same, be perceived desirably by others, and experience immediate benefits. A third review, by Strahan et al (2003), studied the impact of tobacco warning labels on consumption and found that more factual labels were less effective as compared to emotionally provocative labels. Thøgersen's (2021) study goes to show that carbon footprint labels can cause a shift towards sustainable products but does little to explore why or which type of label is most effective in causing the change. We chose to expand on this by developing new labels based on a variety of themes and bridging the knowledge gap in knowing which type of label is most effective in influencing decision-making towards opting for sustainable products.

As identified by the various sources mentioned in the literature review, coffee is an unsustainable source that has many negative impacts on the environment. Nevertheless, over 1 billion people consume coffee daily (Djurovic, 2022). Thus, as the consumption of coffee does not seem to be minimized, our study is driven to target the attitudes toward coffee consumption and to help reduce it. Some of the forces that can restrain our goal include the dependency many in the population have developed for coffee (Olekalns & Bardsley, 1996), the role coffee plays in everyday socialization (Petracco, 2005), and the willingness of people to change. We believe that by making people aware of the unsustainability of coffee through nudges, they will change their coffee consumption patterns.

Research Question

What kind of label is most effective in changing people's decision-making when choosing between tea and coffee?

Experimental Hypothesis

The "environmental checklist labels" condition will be the most successful in shifting the consumer's decision to choose tea over coffee.

Our hypothesis was developed based on an academic literature review that suggests presenting information in a manner that is easy to understand is an essential method of persuasion. As well, one's lack of understanding or confusion about topics related to climate-friendly decisions is a factor in their lack of engagement (White et al., 2019). As our demographic largely consists of students in college, we believe they will pay more attention to text-based, factual evidence over design elements.

Method

Participants

We conducted a Qualtrics survey and distributed it through various chat groups via social media. Based on a power calculation, we were required to have N = 280 responses to have a valid sample size with which results could be generalized; however, we ended up having N = 153 responses (14 responses were eliminated due to them being incomplete). Of our 153 participants (56.5% were female, 38.7% were male, and 3.8% of them identified as non-binary) the majority of them (77.6%), were UBC students. Of these UBC students, 43.6% of the students were moderately stressed about the environment, 32.7% were mildly stressed about the environment, 18.6% were extremely stressed about the environment, and 5.1% were not stressed at all. A majority of our participants, 56.5 %, were Asian; the remaining 43.5% of participants identified themselves as either Black, White, Latin/Central American, Indigenous, Arab, or other.

Conditions

To test our hypothesis, we decided upon four conditions, three of which were experimental and one control. Since we wanted to study the impact of labels on decision-making, we needed to design three different labels to test which of them would be the most effective in nudging participants to choose tea over coffee. The control condition consisted of two images of tea and coffee in near-identical mugs. We tried our best to find pictures with similar degrees of their set-ups, lighting, and aesthetic appeal. This ensured that results were not based on the appeal of the beverage itself rather than the label. Within our experimental conditions, we based our labels on three different social aspects. The first label consisted of water droplets smiling to showcase that tea is a water-efficient beverage. This condition was designed to evoke personal feelings towards environmental conservation. The second experimental condition consisted of a UBC logo with the words "student's choice" below to evoke a sense of belonging to the college community, persuading participants through conformity. Our third and final condition was a simple checklist that displayed the clear environmental benefits of tea, a simple method of portraying factual information to account for any lack of understanding or confusion a consumer has with regards to the benefits of making environmentally-friendly choices. Our independent variable consisted of the design and content of the labels that were portrayed. The dependent variable in our study was the participants' choice of beverage, coffee or tea.

Measures

For our measures, we wanted to see how the type of information relating to an item's carbon footprint on labels ignites change for one to choose a more climate-friendly option. In our study, we wanted coffee drinkers to consider switching to drinking tea more often due to its

lower carbon footprint. We attempted to do this by providing our participants with a survey, where we first asked whether they were more of a coffee or tea drinker or neither, and then presented images with varying degrees of information as mentioned in the conditions section. The questions in the survey were attempting to gain insight into which condition is most successful in persuading consumers to select tea over coffee.

Procedure

We conducted a Qualtrics survey and distributed it through various chat groups via social media. We first obtained consent from the respondent regarding their participation in the study. Then, we asked questions related to their demographic, which includes their gender, whether they study at UBC, and their ethnicity. Alongside these questions, we asked about how stressed they are about climate change, whether they are coffee or tea drinkers, and how often they drink coffee or tea. Following these questions, participants were randomly assigned to either our control condition or one of three experimental conditions, in which they answered whether they are more likely to choose coffee or tea on an average day. These questions are useful in gaining insight into our participants and where they are coming from, and allow us to see which of our conditions best persuaded them to choose tea over coffee.

Results

A chi-square test of independence revealed a significant ($P < .05$) relationship between the nudges and coffee drinkers' decisions. Furthermore, 6 pairwise chi-tests were performed between the conditions and the decisions (coffee or tea). The results of *one* test revealed a significant ($P < .05$) relationship between the environmental checklist labels (condition 3) and coffee drinkers' decisions. Based on these results, we did find support for our hypothesis $\boldsymbol{X2\ (1, N = 153) = 13.8811, p = 0.00117}$ (corrected for multiple comparisons). The results of our control condition revealed that more participants chose coffee over tea. The results of our water droplets condition (condition 1) revealed that more people chose tea over coffee. Found again, the results of our UBC logo condition (condition 2) revealed that more people chose tea over coffee. However, only condition 3 showed a significant result ($P < .05$). (Appendix)

Discussion

The results of our study show that the labels did influence one's decision; thus, the nudges did sway participants into making the more environmentally sustainable decision. However, the results of our study also identified that only one of the three nudges in the experimental condition was successful in getting participants to choose the more environmentally sustainable option. The successful label was the one containing a simple checklist of the clear environmental benefits of tea; the third experimental condition. Our findings, while consistent with previous findings that suggest that labels do influence one's decisions (Gabriels & Lambert 2013), are inconsistent with specific previous findings regarding the influences of the nudges. Previous research suggests that social nudges have a strong impact on influencing people (Charry & Parguel, 2019; Lanzini and Thøgersen, 2014). This inconsistency can be due to the social nudge focused on participants aligning their views with other UBC students. This could be since almost 30% of participants were not UBC students and there is not a great amount of school spirit amongst UBC students; UBC is also an institution that also encourages students to maintain their own independent opinions and thoughts.

Like all studies, our study suffered from limitations and challenges. A big limitation of ours was not being able to meet the target sample size identified by our power analysis. If we would conduct this study again, we would probably start our snowballing process much earlier. We would also start earlier to help increase our chances of a more diverse participation sample as

our current sample was slightly biased as it had mostly women and people who identified themselves as Asian. Another limitation of our study was the lack of deception in our survey. The lack of deception and manipulation could have possibly caused demand characteristics amongst the participants.

A big challenge for us was understanding how to do the JASP analysis and figuring out how to obtain our results. If we were to do this again, we would probably ensure that we attended office hours with Dr. Zhao to cement our understanding of the concepts rather than struggle with it and contact her after our check-in meeting and days before our group presentation.

Despite the limitations and challenges, our study was successful in being relevant in the context of environmental sustainability. The study demonstrated that environmental sustainability can be encouraged in small ways, like nudges through labels and that these small ways will have larger impacts. Just the addition of a simple label can alter an inelastic consumer choice which highlights the effectiveness of informative labels as nudges in choice architecture. This study helps in affirming that everyday changes made by individuals are important and contribute to future sustainability

Recommendation for our UBC client

Firstly, our results suggest that while nudges are useful, not all nudges are effective. Depending on the situation, specific nudges must be used to influence the participant's decision-making. In this scenario, we saw how the label which provided clear information about the environmental impact of tea was effective in convincing participants into choosing green tea over coffee. Thus, while our client, along with other shopkeepers, vendors, and sustainable product creators, can and should use nudges through their labels to convince consumers, they should be very careful in which one they select and should conduct either a focus group or a pre-test before they do so just to ensure that the label and nudge they use is effective.

Secondly, the selection of the environmental checklist label implies that consumers, not all but some, can change if they've given the right motivation and reasoning to do so. Hence it's recommended that education and awareness through products and tools are essential to create a more sustainable sense of living as at times people can be unaware of the consequences of their actions.

Lastly, the data collected from the survey identified that the participants have a very strong dependency on coffee. This implies that their relationship with coffee is not one that they can quit easily. Hence, to help people develop a relationship with products besides coffee that are more sustainable, like tea, they should create more demand for those products and incorporate them into their everyday socialization (the way coffee chains and shops do for example). Nudges will be a defining factor in the process of incorporating these alternative sustainable options into everyday socialization

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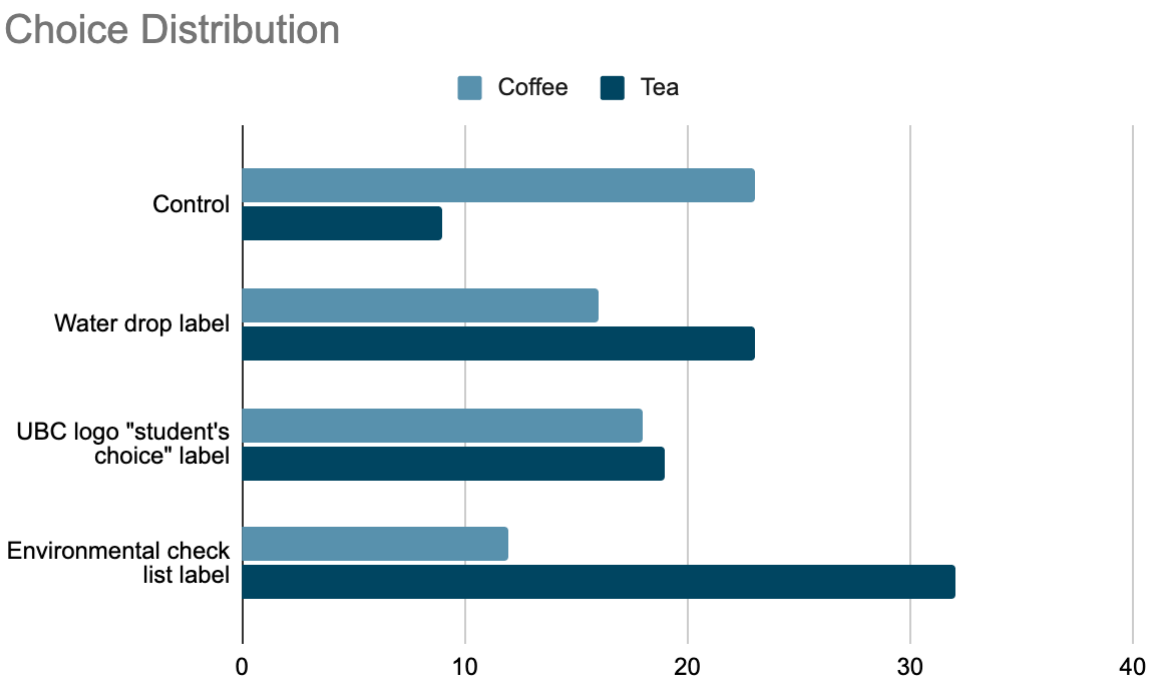
Appendices

Appendix A

Figure 1: Table displaying comparison between participants choice in each condition.

	Control	Water droplets label	UBC logo with “student’s choice” label	Environmental checklist label
Coffee	23	16	18	13
Tea	9	23	19	32

Figure 2: Bar Graph displaying comparison between participants choice in each condition.



Appendix B – Images of choices presented

Figure 1: Cup of Coffee

Figure 2: Cup of Tea

Figure 3: Cup of Tea with Water Sustainability Label

Figure 4: Cup of Tea with Social Aspect Label

Figure 5: Cup of Tea with Environmental Sustainability Label

Appendix C – Survey

Figure 1: General pre-test demographic questionnaire

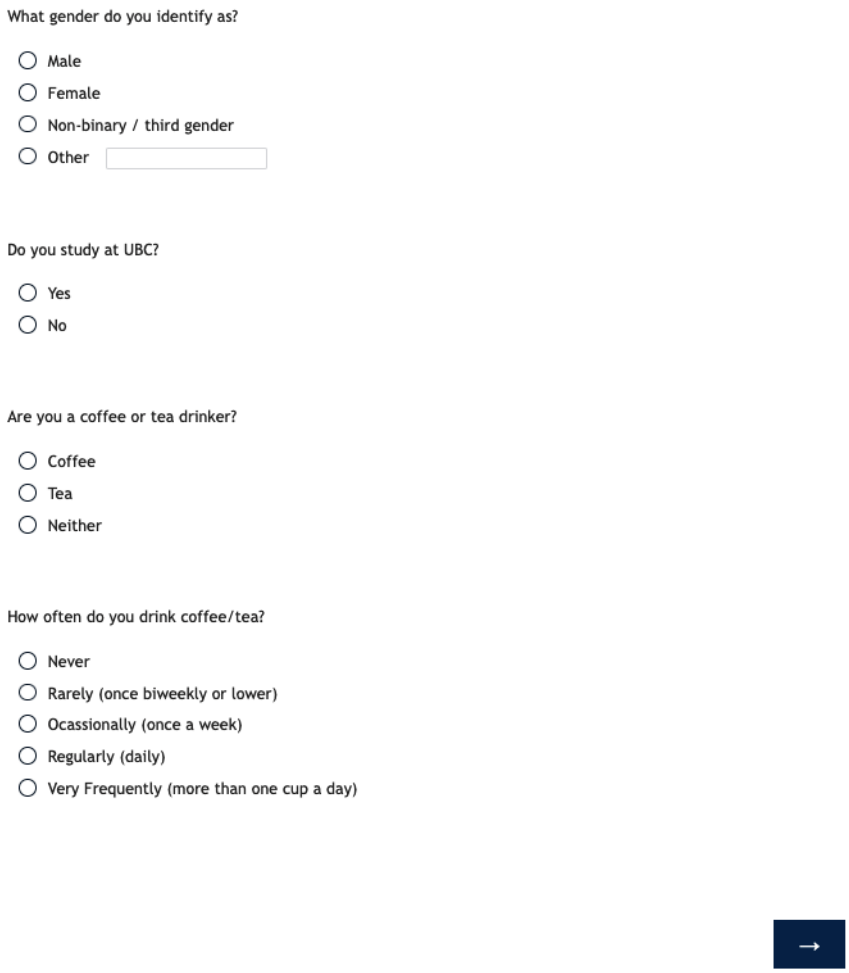


Figure 2: Control Condition Prompt

Which of the following beverages are you more likely to choose on an average day? (Both products cost the same and are available in the same sizes)

○ Coffee

○ Tea

Figure 3: Experimental Condition 1 – Tea with Water Sustainability Label

Figure 4: Experimental Condition 2 – Tea with Social Aspect Label

Which of the following beverages are you more likely to choose on an average day? (Both products cost the same and are available in the same sizes)

○ Coffee

○ Tea

Figure 5: Experimental Condition 3 – Tea with Environmental Sustainability Label

Which of the following beverages are you more likely to choose on an average day? (Both products cost the same and are available in the same sizes)

○ Coffee

○ Tea

Contribution of Team Members

Presentation:
Formation of Idea, Introduction (Research Question & Hypothesis), Measures, Conditions, Qualtrics survey creation, labels creation – Jahaan Sadarangani
Implications and Recommendations, Slide deck formation, Graphics – Khushi Almoula
Participants, Conditions – Shadib Hossain
Results – Fernanda Lyrio de Melo Moura P

Report:
Introduction (RQ & Hypothesis), Conditions, Measures, Appendices – Jahaan Sadarangani
Participants, Discussion, Recommendations for UBC clients, References – Khushi Almoula
Executive Summary, Procedure – Shadib Hossain
Results - Fernanda Lyrio de Melo Moura P