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Exploring Consumer Value of Certified Sustainability Labels of Local, Independent versus National Coffee Brands

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EXPLORING CONSUMER VALUE OF CERTIFIED SUSTAINABILITY LABELS OF LOCAL, INDEPENDENT VERSUS NATIONAL COFFEE BRANDS

A Thesis
Submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfillment of the requirements for the degree of Master of Science

in
The Department of Agricultural Economics and Agribusiness

by
Mary Olivia H. Broussard
B.S., Louisiana State University, 2022
August 2024
Acknowledgments

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Abbreviations

CT  Carbon trust
DCE  Discrete choice experiment
FT  Fairtrade
HB  Hypothetical bias
IIA  Independence from irrelevant alternatives
Org  Organic
RA  Rainforest Alliance
RUT  Random utility theory
SP  Stated preference
WTP  Willingness to pay
U.S.  United States
USDA  United States Department of Agriculture
Abstract

Local, oftentimes independent, coffee shops in the US now measure over 38,000. These shops must differentiate themselves from chain coffee brands in order to compete in the bagged coffee market. Research shows consumers value certified labels, and these labels have the potential to help differentiate independent shops. This paper will look at coffee drinkers’ willingness to pay for certifications (Fairtrade, USDA Organic, Rainforest Alliance, Carbon Trust) and how it differs between national brands (Dunkin, Folgers, Starbucks) and a local provider specified by the individual respondent. Data collection took place in spring of 2024. Results indicated a preference for branded bagged coffee, especially local shop brands. Importantly, the Carbon Trust label, the label respondents were least familiar with, displayed synergistic positive effects in combination with branded local and Starbucks coffee, and consumers were WTP a premium for locally labeled Carbon Trust bagged coffee. These results can inform local coffee retailers to capitalize on their branding as local establishments.

Key words: local coffee, sustainability certifications, willingness to pay
Chapter 1. Introduction

In America, coffee is the most consumed beverage, doubling that of other popular beverages (Paul, 2017). Revenue for out-of-home and in-home consumed coffee in the United States (U.S.) is projected to be $86.7 billion in 2024 (Ridder, 2023). While the industry incorporates numerous roles along its supply chain, such as exporters, importers, roasters, traders, and marketers, retail and coffee shop sales are a staple element of its size. In 2022, the estimated total value of the U.S. coffee market was more than $48 billion, including revenues from 38,400 shops (Ridder, 2023).

U.S. coffee often create value for their customers in several ways. Shops create a unique atmosphere specific to their brand, community, or location that may positively impact consumer opinion (Choi and Lee, 2016). Shops may foster a sense of community by hosting local events, art exhibitions, and live music, turning the coffee experience into a cultural and social gathering.

U.S. coffee shops can also differentiate themselves through their coffee products by offering unique, house-made beverages and signature drinks not easily replicated elsewhere. Unlike other local produce which are typically grown locally, coffee beans are typically imported as raw beans and then roasted locally. This local roasting process allows coffee shops to experiment with diverse roasting techniques, creating a variety of taste profiles that reflect the local culture and preferences. To differentiate coffee beans specifically, they may focus on ethical practices to appeal to environmentally and socially conscious consumers. While U.S. coffee demand has a stable rate of growth, there is growing interest in environmentally and socially sustainable products to match growing interest among consumers considering these characteristics in their food choices (Hu, et al., 2022, Van Bussel, et al., 2022). This presents diverse market opportunities for U.S. coffee shops to offer sustainable coffee.

Consumers value information related to origin, production methods, and conditions of
coffee farming, leading suppliers to offer coffee beans bearing third-party certifications of social or environmental sustainability efforts, such as Fairtrade (Loueiro and Lotade, 2005). Research has delved into customer knowledge of and willingness to pay (WTP) for sustainability-labeled coffees, revealing a higher WTP for such products despite price remaining a critical factor in consumer choice (Andorfer and Liebe, 2015, Cranfield, et al., 2010). While the relative importance of each label among consumers is mixed, organic-labeled coffee tends to command the highest WTP among North American consumers, closely followed by Fairtrade and origin-labeled coffees (Abdu and Mutuku, 2021, Gallenti, et al., 2016, Yang, et al., 2013).

While WTP for certified sustainable coffees presents a unique research question both in literature and to industry, a look into other characteristics dually contributing to WTP for sustainable coffees is needed. This is because these coffees are more expensive to purchase so risks are greater to sellers (Rueda and Lambin, 2013). In this thesis, we will explore the value of sustainability labels on coffee from several sources: a subjective ‘local’ coffee shop and several chain coffee brands to gain greater knowledge about coffee drinkers’ preferences specific to sustainable coffees. Our contribution is to determine how brands, a subjective local shop brand and several chain brands, impact WTP for certified sustainable bags of coffee and further, whether locality acts synergistically and positively with sustainability labels in this context.
Chapter 2. Exploring Consumer Value of Certified Sustainability Labels of Individual-Specified Local versus Chain Coffee

2.1. Introduction

Approximately 40% of the U.S. coffee shop market comprises of roasters and independent coffee shops (Ridder, 2023). These independent coffee shops leverage factors like ambiance and local environment to augment consumer experience, influencing consumer WTP (Samoggia and Riedel, 2018, Spence and Carvalho, 2020). These establishments often evoke a sense of nostalgia, creating idealized spaces that foster emotional connections and enhance customer retention (Hamilton and A. Wagner, 2014). Primary motivators for patronizing independent coffee shops include customer loyalty driven by a desire to support local businesses, reflecting a broader trend of increased interest in buying locally across various industries (Barnes, et al., 2014, Curtis and Cowee, 2011). However, the extent of WTP for bagged coffee beans from local, independent businesses remains largely unexplored.

Economies of scale make it challenging for local, oftentimes independent coffee establishments to compete with national brands in storage, preparation, and roasting of coffee beans (Barreto Peixoto, et al., 2023). Additionally, independent coffee shops may have less diversified supply chains, sourcing beans directly from farmers which increases vulnerability to disruptions (Giovannucci, et al., 2008). Furthermore, brand recognition is typically lower for small suppliers than national brands (Giovannucci, et al., 2008), important because research shows that nearly 39% of U.S. consumers select coffee based on brand (Ridder, 2023). Lack of convenience presents another significant challenge, as many consumers opt to purchase coffee at grocery or convenience stores (Hicks, 2018).

In the sale of bagged coffees, the presence of certified labels conveys sustainability efforts such as organic, Fairtrade, or Rainforest Alliance. While recent studies examine factors
that predict WTP for coffee with sustainability certifications on it (Fuller, et al., 2022, Liu, et al., 2019, Van Loo, et al., 2015) they overlook how WTP may differ for small, local providers versus national premium and conventional coffee brands. In our paper, we aim to fill this literature gap by investigating the combined effects of coffee purchase source labeling and sustainability labeling, exploring how consumer WTP for sustainability labels may vary among different coffee brands. This research can aid local coffee shops in assessing the value of purchasing certified coffee beans relative to their cost. We achieve this objective through a discrete choice experiment (DCE) of U.S. consumers that drink coffee and visit local coffee shops.

2.2. Literature Review

Labeling plays a crucial role in shaping consumer perceptions beyond the label contents, underscoring the significance of label use in coffee markets (Bernard, et al., 2019). Relatedly, studies find that interpreting and understanding different sustainability labels is confusing for consumers (Grunert, et al., 2014, Vanclay, et al., 2011). This paper focuses on four labels: Fairtrade, USDA Organic, Rainforest Alliance, and Carbon Trust. Fairtrade labeling signifies full traceability or segregation of goods from farm to shelf, emphasizing price premiums for producers (Basu, et al., 2018, Reinecke, et al., 2012). USDA Organic certification denotes compliance with USDA standards for organic production methods, with a focus on natural processes and high-altitude growing regions in the coffee industry (Harrison, 2008). The Rainforest Alliance organization upholds standards sustaining vegetation and ecosystems in rainforest regions (Partzsch, et al., 2021). The Rainforest Alliance and Utz Kapeh merged in 2018, creating a unified seal under an industry-respected label (Raynolds, et al., 2007). Carbon Trust labeling indicates accurate measures of carbon footprints, giving any purchasers some kind of certified knowledge of the impact (environmentally or ethically) of their purchasing decisions.
Each of these four labels are third-party certified and often examined in consumer preferences for coffee sustainability labels (Abdu and Mutuku, 2021). Third-party certification can enhance the label’s credibility, potentially increasing WTP for their certifications (Grunert, 2011, Verbeke, 2008) (Del Giudice, et al., 2018, Dragusanu, et al., 2014). Such premiums tend to occur among individuals who are of higher income, are more educated, or are female. Theses demographic segments are more inclined to purchase and pay more for sustainable coffees (Raynolds, et al., 2007, Valenciano-Salazar, et al., 2021).

Numerous studies have examined the premium across certified labels. Organic labeling often commands the highest WTP, followed by Fairtrade labeling (Abdu and Mutuku, 2021, Fuller, et al., 2022, Gallenti, et al., 2016, Maaya, et al., 2018, Van Loo, et al., 2015). For instance, studies reveal an approximate 22% premium for Fairtrade-labeled coffee compared to conventional counterparts (Hiscox, et al., 2011, Yang, et al., 2013). Another study shows a modest increase for FT (Carlson 2008). One study found a small but still significant and positive WTP for carbon-neutral labeled coffee (Birkenberg, et al., 2021). Additionally, labels with higher perceived trust, such as Rainforest Alliance and Fairtrade, tend to elicit greater WTP from consumers (Fuller, et al., 2022). However, the size of the price premium changes depending on either the label, experimental setup, or consumer demographics (Van Loo, et al., 2015). Synergistic effects of multiple labels have not been studied thoroughly, but one study found positive synergy between a ‘direct trade’ claim and a carbon label on coffee (Birkenberg, et al., 2021). Table 2.1. consolidates recent and notable coffee sustainability WTP literature.

There is growing interest in incorporating sustainability labels on various food products, and determining whether WTP for sustainable coffee beans from independent versus chain
Table 2.1. List of Studies Related to Consumer Preferences for Coffee Sustainability Labels

<table>
<thead>
<tr>
<th>Author</th>
<th>WTP Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuller, et al. (2022)</td>
<td>Positive WTP for Fairtrade, organic, and Rainforest Alliance coffee.</td>
</tr>
<tr>
<td>Fuller and Grebitus (2023)</td>
<td>Labeling significantly increased WTP, and highest premium was</td>
</tr>
<tr>
<td></td>
<td>for Fairtrade and organic labels.</td>
</tr>
<tr>
<td>Gallenti, et al. (2016)</td>
<td>Heterogeneous preferences for labels among Italian consumers</td>
</tr>
<tr>
<td></td>
<td>More interest in organic than Fairtrade label</td>
</tr>
<tr>
<td>Lee and Bateman (2021)</td>
<td>Demand for Fairtrade and organic-labeled coffees was more</td>
</tr>
<tr>
<td></td>
<td>elastic than conventional coffee, and WTP was positive for labels.</td>
</tr>
<tr>
<td>Lingnau, et al. (2019)</td>
<td>Non-sustainability had a larger (negative) effect on willingness to pay</td>
</tr>
<tr>
<td></td>
<td>than sustainability labeling, which had a positive effect.</td>
</tr>
<tr>
<td>Liu, et al. (2019)</td>
<td>From highest to lowest, consumers valued traceability, organic certification,</td>
</tr>
<tr>
<td></td>
<td>grading, environmental friendliness, and fair-trade certification.</td>
</tr>
<tr>
<td>Loureiro and Lotade (2005)</td>
<td>WTP higher for Fairtrade and shade-grown coffee than for organic,</td>
</tr>
<tr>
<td></td>
<td>and all elicited a positive premium.</td>
</tr>
<tr>
<td>Maaya, et al. (2018)</td>
<td>Comparable, high WTP was found for Fairtrade and organic labels, and</td>
</tr>
<tr>
<td></td>
<td>altruistic attitudes significantly affect WTP for labels.</td>
</tr>
<tr>
<td>Obermiller, et al. (2009)</td>
<td>Small firms should focus on quality first, while big firms should</td>
</tr>
<tr>
<td></td>
<td>promote the social responsibility of Fair Trade.</td>
</tr>
<tr>
<td>Sepúlveda, et al. (2016)</td>
<td>Fairtrade label was most valued by all coffee consumers and</td>
</tr>
<tr>
<td></td>
<td>Rainforest Alliance least.</td>
</tr>
<tr>
<td>Valenciano-Salazar, et al. (2021)</td>
<td>Controlling for socioeconomic factors, higher WTP for carbon-</td>
</tr>
<tr>
<td></td>
<td>neutral labeling than Fairtrade or ISO.</td>
</tr>
<tr>
<td>Van Loo, et al. (2015)</td>
<td>WTP for certified-organic coffee was higher than Rainforest Alliance and</td>
</tr>
<tr>
<td></td>
<td>Fair-Trade USA coffee for U.S. consumers.</td>
</tr>
</tbody>
</table>

purchase sources differs is valuable to industry. National coffee brands are often perceived to offer higher product quality, particularly notable in the case of Starbucks, compared to smaller coffee shops (Moon, et al., 2023). One study suggests that larger, more recognizable
coffee brands may have an advantage in marketing and selling coffee with Fairtrade and other ethicality labels to consumers (Obermiller, et al., 2009). While consumers value locally-labeled foods (Remar, et al., 2016), WTP for coffee from independent, oftentimes local, businesses versus chain businesses is largely unknown. A non-coffee study found that locally produced food items are perceived by a majority of consumers as a better quality and as more compliant to consumer values and specifications than “regional” or “national” food items (Pícha, et al., 2018).

Several non-coffee studies have examined the interaction between locality and sustainability labels or claims on food products. Tennessee restaurants were willing to pay a price premium for Tennessee-certified grass-fed beef, for both ground beef and sirloin steak (Griffith, et al., 2019). Local designation was the highest valued claim on fresh produce, and this claim was further enhanced by the addition of the Fairtrade label (Onozaka and McFadden, 2011). These results indicate that consumers pay price premiums for locally designated food products, and there may be enhanced value to consumers by adding sustainability attributes to food products.

Such information on the interaction of local and labels does not exist for coffee. This paper tries to fill the gap in the research by investigating whether the locality of small, independent coffee shops synergistically interacts with sustainability certification labels, leading to higher willingness to pay for coffee bags bearing these labels. This study tests several hypotheses. Firstly, U.S. consumers taking the survey will have additional WTP for coffee bag choices with one or more of the following labels: Fairtrade, USDA Organic, Rainforest Alliance, and Carbon Trust.

Secondly, following previous studies (Abdu and Mutuku, 2021, Gallenti, et al., 2016, Maaya, et al., 2018, Van Loo, et al., 2015), we expect WTP to be the highest for the USDA Organic label.
Third, the simultaneous presence of any combination of the four sustainability labels and one of the four purchase sources will have an additional interaction effect on consumers’ choice decisions. This means the consumer’s utility will be impacted synergistically by the bag source and sustainability label. Lastly, consumer preferences will be influenced by the gender of consumers, and females will show higher WTP in accordance with the literature (Raynolds, et al., 2007).

2.3. Methods

2.3.1. Discrete Choice Experiment

To understand preferences and WTP for certified labels and different coffee sources, we rely on a discrete choice experiment (DCE). DCE results align closely with consumer decision-making (Auger and Devinney, 2007, Norwood and Lusk, 2011) and can reduce some types of desirability bias (social), when the true opinion is concealed by respondents with the goal of making themselves seem altruistic (Drichoutis, et al., 2016). DCEs are commonly used to assess WTP for sustainability labels (Lombardi, et al., 2017, Onozaka and McFadden, 2011, Steiner, et al., 2017, Van Loo, et al., 2015). The DCE design, including all attributes and levels, are detailed in Table 2.2. There is a coffee bag source attribute, attributes for each of the four sustainability labels, a coffee bean roast attribute, and a price attribute. Levels of each attribute are included in the table. A design- the fractional factorial specifically- was used to design the DCE attributes and levels. In Appendix Figure B.1., there is a choice set example with different coffee bags.

Coffee source is the brand of the coffee to determine its potential influence on consumer preferences. Brand options included a local coffee shop, Starbucks, Dunkin’, and Folgers. Starbucks and Dunkin’ were chosen because both are well-recognized national U.S. chain stores that sell bagged coffee. Folgers was chosen as a recognizable ‘conventional’ coffee brand sold in
Table 2.2. Levels and Attributes of Coffee Discrete Choice Experiment

<table>
<thead>
<tr>
<th>Attribute (# of levels)</th>
<th>Description</th>
<th>Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coffee company (4)</td>
<td>The seller/source of purchase of the bag of coffee</td>
<td>Local, Starbucks, Folgers, Dunkin*</td>
</tr>
<tr>
<td>USDA Organic (2)</td>
<td>Adheres to regulations for growing, soil, and other parameters</td>
<td>Present, not present*</td>
</tr>
<tr>
<td>Fairtrade (2)</td>
<td>Provides ethical and environmental sustainability regulations at farm origin and along the supply chain of a variety of foods and ingredients</td>
<td>Present, not present*</td>
</tr>
<tr>
<td>Rainforest Alliance (2)</td>
<td>Meets requirements on the ethicality of farers, sustainability of practices, and sustainability in the supply chain</td>
<td>Present, not present*</td>
</tr>
<tr>
<td>Carbon Trust (2)</td>
<td>Greenhouse gas emissions from production are reduced and/or offset by carbon credit, meaning minimal impact to global climate change</td>
<td>Present, not present*</td>
</tr>
<tr>
<td>Roast (2)</td>
<td>The roast of the coffee beans</td>
<td>Dark roast, Medium roast*</td>
</tr>
<tr>
<td>Price (5)</td>
<td>Price of the 12-ounce bag of coffee</td>
<td>$5.95, $7.95, $9.95, $11.95, $13.95</td>
</tr>
</tbody>
</table>

*Indicates the omitted reference category

grocery stores nationally. The designation of the local shop was determined by respondents’ self-reported frequented establishments. This local shop was subjective and based on respondent interpretation, encompassing chains, private label roasters, or independent coffee shops that respondents considered ‘local’. Respondents were asked the number of locations of this determined local shop so that their shop might be classified as independent or chain. At the beginning of the survey, respondents could manually type in their local coffee shop, and this name appeared in each alternative among the choice sets that featured local coffee. If respondents did not answer, [Your Local Coffee Shop] appeared in lieu of a specific brand name for each appropriate alternative. Because Dunkin and Starbucks were two of the national brands featured in the DCE, respondents were not permitted to answer with either of these as their local shop to ensure that the DCE was sensible. Local shop bags were brown with no other design to
increase realism in line with actual bags sold by many local shops.

In terms of labels, we include USDA Organic, Fairtrade, Rainforest Alliance, and Carbon Trust labels, all third-party certifications to remove issues of uncertified sustainability claims. The actual presence of these labels in the coffee industry varies between frequent (Organic, Fairtrade, and Rainforest Alliance) and infrequent (Carbon Trust). The inclusion of these labels on coffee bags allowed us to explore consumer preferences across various combinations. Certification labels were superimposed onto the coffee bag images shown in the survey to increase realism for respondents. Notably, the presentation of more than two labels on a coffee bag, while uncommon in retail settings, mirrored practices observed among smaller roasters with sustainability-focused missions.¹

The roast of the coffee bean was included as an attribute to enhance realism in the choice scenarios. Participants were presented with one of two possible roast options: medium and dark. Light roast was excluded as other literature showed it was less preferred than other roasts (Yani and Novitasari, 2024). Each option was accompanied by corresponding imagery reflecting the roast level, ensuring clarity in the choice sets. Some bags had roast name differences, and these were mentioned in instructions to minimize confusion. For instance, Folgers’ dark roast was shown and labeled as ‘Folgers’ Midnight Roast.’

Lastly, price ranged from $5.95 to $13.95² per 12-ounce bag, aligning with market information. This price range was wide enough to incorporate both the lower and higher ends of the price range for bagged coffee from local shops, grocery stores, retailers, and online.

The experimental design encompassed three coffee bag alternatives and an opt-out option

---

¹ One example: Pura Vida Coffee, an independent roastery out of Seattle, incorporates Fairtrade, Organic, Shade-grown, and other labels onto its' bags.
² Folgers was $0.442 per ounce which adjusted to near our lowest level for 12 oz; $5.30. Starbucks was $9.38 according to stores. Local bags had a range of prices in stores from $9.75 to over $14.00 per 12 oz.
in each choice set, with our participants assigned randomly to one of ten blocks of four choice sets. The DCE was designed in Ngene based on a D-efficient design, optimizing parameter estimates and ensuring balanced attribute representation across choice sets. To enhance respondent comprehension, participants watched video instructions\(^3\) detailing the DCE attributes and levels, followed by comprehension assessment questions and a reminder if questions were answered incorrectly\(^4\). Choice set order was randomized within each block to reduce potential order effects.

We considered several other elements of best practice for DCE and stated preference (SP) methods. Hypothetical bias (HB) is the disparity between results obtained from hypothetical elicitation and those from real payment scenarios (Penn and Hu, 2018) and most commonly leads to overstated/inflated values in WTP studies (Haghani, et al., 2021). The video tutorial contained a cheap talk script to encourage responses reflective of real purchase scenarios (Penn and Hu, 2019). To identify potential protestors,\(^5\) a follow-up question appeared after the DCE for those who chose not to purchase a bag in all four choice sets. Those who objected to the way the question was asked were removed from analysis.\(^6\) Data quality measures included checks for bots deemed to threaten data integrity and timed DCE video instructions supplemented by instruction checking questions and reminders to capture inattentive respondents\(^7\) (Goodrich, et al., 2023, Malone and Lusk, 2019).

2.3.2. Survey Design

The survey included consent and qualifier questions, a separate DCE related to charitable

---

\(^{3}\) Respondents were given a random assignment to one of two videos, which were exactly the same except for the instructional choice set; one featured higher prices and the other showed lower prices, found at the [following link](#).

\(^{4}\) Both the follow up questions and the reminder are included in the ‘full survey’ located in the Appendix.

\(^{5}\) Protest responses, defined as economically- irrational zero WTP (Lo et al., 2015) are common in DCEs, and their analysis affects the statistical performance of empirical models (Loureiro et al., 2013). See appendix for reference.

\(^{6}\) Protest reasoning options are shown in the full survey in the Appendix.

\(^{7}\) Inattention significantly affects responses in choice experiments, causing misreported attitudes and choice inconsistency (Malone, 2018).
donations, a coffee characteristics section separate from the coffee DCE, and questions on labels, sustainability, and demographics. Respondents answered screening questions, and only coffee shop visitors in the last three months were eligible for the coffee DCE. We asked each respondent to name their most-visited local shop name and based on their knowledge, the number of locations that local coffee shop had. Coffee-related questions covered purchase habits, brands, sources, roast, ounces, and frequency. Other questions addressed spending, motivations, attitudes, and demographics. The full survey is available in the Appendix.

This survey instrument was made and distributed to respondents in Qualtrics XM. The survey went through several iterations to ensure credibility. Initially, we conducted a series of personal interviews with researchers familiar with survey design for basic checks. We interviewed industry people, and then we conducted five focus groups. Data collection occurred via a panel provided by Dynata in Spring 2024.

2.3.3. Economic Model

The underlying theoretical framework used in analyzing DCE data is random utility theory (RUT), where rational individuals make choices by comparing and selecting an alternative with highest utility. RUT expresses a rational person’s indirect utility ($U_{ijt}$) function as in Equation 1, in which person $i$ derives utility from alternative $j$, a bag of coffee, in the $t$-th choice set (McFadden and Train, 2000).

$$U_{ijt} = X_{ijt}\beta + e_{jt}$$  \hspace{1cm} (1)

$X_{ijt}$ is product attribute, namely label, brand, roast, and price as a linear function of time, $\beta$ represents a vector of parameters that we don’t know that must be estimated, and $e_{jt}$ is error-unobservable heterogeneity due to attribute perceptions or non-controllable factors. Equation (2)
shows that a person will pick coffee bag j over coffee bag k, if the utility of j is greater. Term $e_{ij} - e_{ik}$ represents the difference in unobservable components of utility between the two bags of coffee.

$$U_{ij} + e_{ij} > U_{jk} + e_{ik}$$  \hspace{1cm} (2)

Equation 3 presents the utility function with attributes coded as dummy variables. 'OptOut' equals 1 when respondents select 'prefer not to buy any of these,' and 0 otherwise. Local, Starbucks, and Folgers are brand dummy variables with Dunkin’ as the reference. FT, Org, Rain, and Carbon are label dummy variables, while the summation interactions between sources and labels serve as interaction term dummy variables with Dunkin’ as the reference. Price is treated as a continuous variable, and the error term is included at the end of the equation. Importantly, it includes interaction terms between label and brand attributes, capturing synergistic effects on coffee bag choice. These interactions, such as ‘FolgersRA’, measure how the value of a label (Rainforest Alliance) may change with a specific brand (Folgers).

$$U_{ijt} = \beta_0 OptOut_{ijt} + \beta_1 Local_{ijt} + \beta_2 Starbucks_{ijt} + \beta_3 Folgers_{ijt} + \beta_4 FT_{ijt} + \beta_5 Org_{ijt} + \beta_6 Rain_{ijt} + \beta_7 Carbon_{ijt}$$
$$+ \sum_{k=8}^{11} \beta_k (Local \ast Label)_{ijt}$$
$$+ \sum_{k=12}^{15} \beta_k (Starbucks \ast Label)_{ijt}$$
$$+ \sum_{k=16}^{19} \beta_k (Folgers \ast Label)_{ijt}$$
$$+ \beta_{20} Price_{ijt} + e_{ijt}$$  \hspace{1cm} (3)

2.3.4. Economic Specification

Assuming a type 1 extreme value distribution, a logit model can be created to determine the probability of individuals selecting alternative j. Conditional logit models, shown in Equation
4, assume independence from irrelevant alternatives (IIA), suggesting that some respondents may select options not fully representative of their preferences among all alternatives (McFadden, 1972).

\[ P_{ijt} = \frac{\exp (X_{ijt} \beta)}{\sum_{k=1}^{J} \exp (X_{ikt} \beta)} \]  

(4)

Conversely, the mixed logit model accommodates heterogeneous preferences and relaxes the IIA property, as shown by Equation 5.

\[ P_{ijt} = \int \frac{\mathbb{E} (X_{ijt} \beta)}{\sum_{k=1}^{J} \mathbb{E} (X_{ikt} \beta)} h(\beta) d\beta \]  

(5)

In this model, unknown parameters \( \beta \) are treated as random variables, allowing for variability across respondents (Hu, et al., 2009). This specification enables flexible choice substitution and accurate standard error estimates, deviating from the IIA property (Lancsar 2017). Additionally, the mixed logit model coefficients (parameters) are assumed to be interdependent, suggesting potential synergies between attributes such as coffee brand and label. The spread of randomized coefficients \( \beta \) are shown like \( \beta \); \( H(\theta, \nu) \), where \( H(\cdot) \) shows a probability distribution model or function. This \( H(\cdot) \) might show distribution functions independently of every \( \beta \) or, jointly, a function of all the \( \beta \). \( \theta \) and \( \nu \) show the mean and also the variance of the distribution that underlies \( H(\cdot) \) or another crucial coefficient that may be decided by the shown distribution. Instead of \( \beta \), \( \theta \) and \( \nu \) are estimated as the true or realized coefficients or parameters (Hu, et al., 2009). In the mixed logit model, we assume that all attributes, except for price, as random following a normal distribution.

WTP values are calculated using Equation 6, where the top value represents the mean value (an estimate) of the coefficient that is linked to one certain attribute, \( \beta_{attribute} \), and the bottom value is the price parameter or coefficient, \( \beta_{price} \).
\[ WTP_i = -\frac{\beta_{\text{attribute}} + \beta_{\text{Brand} \times \text{attribute}}}{\beta_{\text{price}}} \]  \hspace{1cm} (7)

The equation also incorporates interaction variables, to describe how WTP for an attribute may vary with brand. Standard errors for WTP of each attribute are calculated using the delta method.

2.4. Results and Discussions

2.4.1. Survey Sample Results

A total of 434 respondents qualified to answer the coffee DCE, but after removing incomplete respondents, the useable model sample is 432.\(^8\) Table 2.3. shows demographics of the respondents, as well as segmented demographics of the respondents who purchased locally.

Table 2.3. Sample Summary Statistics of Coffee Drinkers who Visited Local Coffee Shops

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total Sample</th>
<th>Non- Local Purchasers(^1)</th>
<th>Local Purchasers(^2)</th>
<th>Local Frequenters(^3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(432)</td>
<td>(139)</td>
<td>(167)</td>
<td>(124)</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>32.2</td>
<td>38.7</td>
<td>28.7</td>
</tr>
<tr>
<td>18 to 34</td>
<td>17.4</td>
<td>13.7</td>
<td>18.6</td>
<td>20.2</td>
</tr>
<tr>
<td>35 to 54</td>
<td>48.8</td>
<td>43.2</td>
<td>50.3</td>
<td>54.0</td>
</tr>
<tr>
<td>55 to 74</td>
<td>28.2</td>
<td>36.0</td>
<td>26.4</td>
<td>22.6</td>
</tr>
<tr>
<td>75+</td>
<td>5.1</td>
<td>7.2</td>
<td>4.8</td>
<td>3.2</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>51.2</td>
<td>48.9</td>
<td>46.1</td>
<td>61.3</td>
</tr>
<tr>
<td>Female</td>
<td>48.4</td>
<td>51.1</td>
<td>53.9</td>
<td>38.7</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some high school</td>
<td>3.7</td>
<td>5.8</td>
<td>3.6</td>
<td>1.6</td>
</tr>
<tr>
<td>High school/GED</td>
<td>13.9</td>
<td>14.4</td>
<td>12.6</td>
<td>15.3</td>
</tr>
<tr>
<td>Some college/Technical</td>
<td>15.3</td>
<td>12.2</td>
<td>18.0</td>
<td>15.3</td>
</tr>
<tr>
<td>College degree</td>
<td>29.6</td>
<td>30.9</td>
<td>27.0</td>
<td>32.3</td>
</tr>
<tr>
<td>Postgraduate work</td>
<td>3.7</td>
<td>4.3</td>
<td>4.8</td>
<td>1.6</td>
</tr>
<tr>
<td>Postgraduate degree</td>
<td>27.1</td>
<td>26.6</td>
<td>28.1</td>
<td>26.6</td>
</tr>
</tbody>
</table>

(table cont’d)

\(^8\)Two were removed as incomplete. Five people opted out in every choice set, but none were determined to be protestors because their stated reason for opting out was related to their coffee preferences.
We define three types of coffee consumers based on stated frequency of purchasing local coffee:

1) Non-local purchasers: purchased local coffee five times or less per year; 2) Local purchasers: purchased local coffee at least six times a year and at most monthly, and 3) Local frequenters: purchased local coffee weekly or more. 32% of the sample were non-local purchasers, 39% were local purchasers, and 29% were local frequenters. Only 1.8% of respondents chose not to modify [Your Local Coffee Shop] to be a place specific to them in qualifying questions.

In terms of demographic outcomes, our sample skewed older, with 49% between 35 and
54 years old, and 28% of the sample between age 55 to 75. Only 17% of the sample was between the ages of 18 and 34. For local purchasers and local frequenters, the 35 to 54 age range made up the majority of the sample. Males were slightly over half of the sample at 51%. A majority of non-local and local purchasers were female, but the local frequenters’ sample was 61% male. Most (60%) had a college degree or higher, higher than the 2021 national average of 38% (Korhonen, 2023). For the three local and non-local segments, all three segments’ majority had at least a college degree. In terms of employment status, 48% were employed full-time, and a majority were employed at least part-time. Of the local frequenters, nearly three quarters worked at least part time. Only the non-local purchasing segment did not have a majority working at least part time. 47% of the sample had no dependents and 46% had between one and three. A slight majority of local coffee purchasers and most local frequenters had at least one dependent. The majority were married at 59%. A majority of non-local, local, and local frequenters were married, respectively. Nearly 76% of the sample were white. Around three quarters of non-local, local, and local frequenters, respectively, were white. African Americans made up 10% of the sample, and they made up nearly 15% of local frequenters. 90% indicated that they were not of Spanish, Latino, or Hispanic origin. A large majority made at or above $50,000 household income in 2022 at 67%. Nearly a third made $100,000 or more annually. Of local coffee purchasers and local frequenters respectively, nearly a third made at least $100,000 annually.

Summary results of coffee-related characteristics appear in Table 2.4. 32% respondents most frequently purchased ground or whole bean coffee from Starbucks, followed by Folger’s (30%), Dunkin’ (26%), Maxwell House (19%), and 17% purchased from small coffee companies. 40% indicated only purchasing one brand while 49% indicated purchasing two or more brands of coffee. 57% indicated they most frequently purchased coffee beans at grocery
stores. 13% most frequently purchased beans from local, independent coffee shops, and 11% most frequently purchased from national or regional coffee chains. 52% said they typically made brewed coffee, while a third use K-cup coffee most frequently. 31% most typically made French press coffee or espresso. 72% indicated they only drank coffee in one form, while 28% indicated they typically drank coffee in two or more forms including brewed, French press, stovetop, K-cup, cold brewed, espresso, instant coffee, or other forms. When asked how often they bought bagged coffee, 40% said monthly, 40% said less frequently, and 15% said more frequently. When asked how often respondents bought coffee at local locations, 56% said monthly or more frequently. 52% bought coffee from chains monthly or more frequently. Coffee bag purchases made at convenience stores were less frequent, with the majority, 60%, stating they made those purchases less than monthly. 58% indicated that they typically drank medium roast coffee and 24% indicated dark roast. Only 16% stated that they typically drank light or flavored roast. When asked what the most important reason why respondents drank coffee was, a slight majority said taste. 27% and 20% respectively said caffeine and habit. 70% indicated they spent $30 or less on bagged coffee per month with 45% of those responses being spending between $11 and $30 monthly. 27% indicated spending more than $30 monthly.

Table 2.4. Coffee Consumer Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Eight Brands (n=382)</td>
<td></td>
</tr>
<tr>
<td>Starbucks</td>
<td>31.5</td>
</tr>
<tr>
<td>Folgers</td>
<td>29.9</td>
</tr>
<tr>
<td>Dunkin’</td>
<td>25.5</td>
</tr>
<tr>
<td>Maxwell House</td>
<td>18.8</td>
</tr>
<tr>
<td>Small company’s brand</td>
<td>17.1</td>
</tr>
<tr>
<td>Peets’ Coffee</td>
<td>13.9</td>
</tr>
<tr>
<td>Grocery store’s generic brand</td>
<td>13.9</td>
</tr>
<tr>
<td>Caribou Coffee</td>
<td>9.3</td>
</tr>
</tbody>
</table>

(table cont’d)
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coffee source (n=379)</td>
<td></td>
</tr>
<tr>
<td>Grocery store</td>
<td>56.5</td>
</tr>
<tr>
<td>Local, independent coffee shop</td>
<td>12.5</td>
</tr>
<tr>
<td>National chain coffee shop</td>
<td>7.2</td>
</tr>
<tr>
<td>Regional chain coffee shop</td>
<td>3.9</td>
</tr>
<tr>
<td>Convenience store</td>
<td>2.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coffee Bag purchase frequency¹ (n=432)</th>
<th>Local</th>
<th>Chain</th>
<th>Convenience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>6.9</td>
<td>12.0</td>
<td>24.8</td>
</tr>
<tr>
<td>One to five times per year</td>
<td>25.2</td>
<td>22.5</td>
<td>24.3</td>
</tr>
<tr>
<td>Six to ten times per year</td>
<td>12.0</td>
<td>13.0</td>
<td>11.1</td>
</tr>
<tr>
<td>Monthly</td>
<td>26.9</td>
<td>19.9</td>
<td>20.6</td>
</tr>
<tr>
<td>Weekly</td>
<td>21.3</td>
<td>22.0</td>
<td>10.9</td>
</tr>
<tr>
<td>Multiple times per week</td>
<td>7.4</td>
<td>10.4</td>
<td>8.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coffee roast preferred (n=432)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium</td>
<td>58.1</td>
</tr>
<tr>
<td>Dark/French</td>
<td>23.6</td>
</tr>
<tr>
<td>Light</td>
<td>9.0</td>
</tr>
<tr>
<td>Flavored</td>
<td>6.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Top 5 Coffee purchase form (n=432)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic brew/dripped</td>
<td>52.1</td>
</tr>
<tr>
<td>K-cup</td>
<td>34.0</td>
</tr>
<tr>
<td>Espresso</td>
<td>16.9</td>
</tr>
<tr>
<td>French press</td>
<td>13.9</td>
</tr>
<tr>
<td>Instant²</td>
<td>11.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coffee drinking motivation (n=432)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Taste</td>
<td>50.2</td>
</tr>
<tr>
<td>Caffeine</td>
<td>26.9</td>
</tr>
<tr>
<td>Habit of drinking coffee</td>
<td>20.1</td>
</tr>
<tr>
<td>Atmosphere/ people there</td>
<td>1.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Typical spending amount (n=432)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$10 or less</td>
<td>24.8</td>
</tr>
<tr>
<td>$11 to 30</td>
<td>45.4</td>
</tr>
<tr>
<td>$31 to 50</td>
<td>19.4</td>
</tr>
<tr>
<td>More than $50</td>
<td>7.9</td>
</tr>
</tbody>
</table>

¹Respondents answered the purchase frequency question for each of the three shown sources: local coffee shops, chain coffee shops, and convenience stores/grocery stores/gas stations.

²Respondents who indicated they only drank instant coffee did not answer the brand or coffee source questions, but still completed the DCE.

Respondents answered questions regarding their familiarity and purchase of sustainability labels as well as their attitudes and beliefs regarding sustainability. Results are shown in Table 2.5. USDA Organic had the highest rate of familiarity at 70%, and Fairtrade followed with 46%
having some sort of familiarity with the label prior to taking the survey. About a third was also

Table 2.5. Label Purchase and Motivation

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label familiarity</td>
<td></td>
</tr>
<tr>
<td>USDA Organic</td>
<td>70.1</td>
</tr>
<tr>
<td>Fairtrade</td>
<td>45.8</td>
</tr>
<tr>
<td>Rainforest Alliance</td>
<td>34.5</td>
</tr>
<tr>
<td>Carbon Trust</td>
<td>15.3</td>
</tr>
<tr>
<td>Label trust&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>USDA Organic</td>
<td>74.1</td>
</tr>
<tr>
<td>Fairtrade</td>
<td>65.1</td>
</tr>
<tr>
<td>Rainforest Alliance</td>
<td>59.0</td>
</tr>
<tr>
<td>Carbon Trust</td>
<td>47.7</td>
</tr>
<tr>
<td>Regular purchasers&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>USDA Organic</td>
<td>71.3</td>
</tr>
<tr>
<td>Fairtrade</td>
<td>56.0</td>
</tr>
<tr>
<td>Rainforest Alliance</td>
<td>44.7</td>
</tr>
<tr>
<td>Carbon Trust</td>
<td>32.9</td>
</tr>
<tr>
<td>Label primary reasoning</td>
<td></td>
</tr>
<tr>
<td>Sustainable/Ethical reasons</td>
<td>47.3</td>
</tr>
<tr>
<td>Health reasons</td>
<td>21.7</td>
</tr>
<tr>
<td>Better taste</td>
<td>10.7</td>
</tr>
<tr>
<td>No/little benefit</td>
<td>6.9</td>
</tr>
</tbody>
</table>

<sup>1</sup>Calculated as those who indicated ‘Strongly Agree’ or ‘Agree’.

<sup>2</sup>Calculated as those who indicated they would purchase either ‘sometimes’, ‘often’, or ‘always.

familiar with the Rainforest Alliance label. 47% indicated familiarity with two or more of the
included labels, and 13% indicated no familiarity with any of the labels. These results are
comparable to other studies where organic labeling is most well-recognized, followed by Fairtrade (Abdu and Mutuku, 2021).

A majority indicated they had trust (defined as those answering ‘Strongly Agree’ or
‘Agree’ to Likert-style question) in the USDA Organic, Fairtrade, and Rainforest labels, at 74%,
65%, and 59% respectively. The Carbon Trust label had 48% trust. This result for Carbon Trust
seems unusual, but other studies have found that consumers have both limited awareness of
carbon impacts in coffee and have positive willingness to pay for carbon labeling (Birkenberg, et
Respondents provided their purchase frequency of foods with any of the four certifications. Regular purchasers are defined as those who indicated purchasing labeled foods ‘Sometimes’, ‘Often’, or ‘Always.’ 71% were regular purchasers of foods with the USDA Organic label, 56% of foods with Fairtrade label, 45% of foods with Rainforest Alliance label, and 33% of foods with Carbon Trust label. In terms of perceived benefit of each label, 47% listed sustainability and ethical reasons, and 32% indicated the reasoning being either health or taste. The remaining 28% of respondents thought labels had either little benefit or did not know the benefits of each.

Compared to national chains like Starbucks or Dunkin', a majority thought that local coffee shops: had a better atmosphere or sense of community (69%), had better tasting coffee (62%), and were more convenient (53%). This aligns with findings that local food is perceived as more high quality and fitting better into consumers’ lifestyles than regional or nationally produced food (Pícha, et al., 2018). 65% indicated that they went out of their way to have sustainable habits, and 60% considered themselves very conscious of ethicality and sustainability issues. 50% stated purchasing sustainability products.

2.4.2. Model Results

Model results appear in Table 2.6. Models I and II present conditional logit results, with the latter including brand*label interactions. Models III and IV display mixed logit results, with the latter again incorporating brand*label interactions. Model fit information for each of the four models also facilitates comparison regarding prediction error and goodness of fit.

Focusing on Model I, many of the signs and magnitude of attributes are as expected. First, the price and optout variables have significant negative coefficients, and this is indicative that, if you take all other characteristics as fixed, coffee drinkers will have lower likelihood of
picking a bag of coffee if the price is more and that consumers prefer to buy a bag of coffee than

Table 2.6. Model Results

<table>
<thead>
<tr>
<th></th>
<th>I: Cond. Logit</th>
<th>II: Cond. Logit w/ Interactions</th>
<th>III: Mixed Logit</th>
<th>IV: Mixed Logit w/ Interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef.</td>
<td>SE</td>
<td>Coef.</td>
<td>SE</td>
</tr>
<tr>
<td>Price</td>
<td>-0.167***</td>
<td>(0.010)</td>
<td>-0.167***</td>
<td>(0.011)</td>
</tr>
<tr>
<td>Optout</td>
<td>-2.907***</td>
<td>(0.157)</td>
<td>-3.016***</td>
<td>(0.231)</td>
</tr>
<tr>
<td>Local</td>
<td>0.305***</td>
<td>(0.074)</td>
<td>0.232</td>
<td>(0.269)</td>
</tr>
<tr>
<td>Folgers</td>
<td>-0.607***</td>
<td>(0.087)</td>
<td>-0.641**</td>
<td>(0.275)</td>
</tr>
<tr>
<td>Starbucks</td>
<td>-0.041</td>
<td>(0.079)</td>
<td>-0.350</td>
<td>(0.275)</td>
</tr>
<tr>
<td>Dark Roast</td>
<td>0.029</td>
<td>(0.052)</td>
<td>0.014</td>
<td>(0.055)</td>
</tr>
<tr>
<td>Organic</td>
<td>0.209***</td>
<td>(0.056)</td>
<td>0.157</td>
<td>(0.140)</td>
</tr>
<tr>
<td>Fairtrade</td>
<td>-0.022</td>
<td>(0.058)</td>
<td>-0.001</td>
<td>(0.142)</td>
</tr>
<tr>
<td>Rainforest</td>
<td>0.099*</td>
<td>(0.056)</td>
<td>0.165</td>
<td>(0.147)</td>
</tr>
<tr>
<td>Carbon</td>
<td>0.107*</td>
<td>(0.058)</td>
<td>-0.167</td>
<td>(0.148)</td>
</tr>
<tr>
<td>SD-Local</td>
<td>1.069</td>
<td>(0.687)</td>
<td>1.151*</td>
<td>(0.680)</td>
</tr>
<tr>
<td>SD-Folgers</td>
<td>1.173*</td>
<td>(0.690)</td>
<td>1.340*</td>
<td>(0.743)</td>
</tr>
<tr>
<td>SD-Starbucks</td>
<td>0.439</td>
<td>(0.954)</td>
<td>0.445</td>
<td>(1.262)</td>
</tr>
<tr>
<td>SD-Dark Roast</td>
<td>0.524</td>
<td>(0.967)</td>
<td>0.045</td>
<td>(1.491)</td>
</tr>
<tr>
<td>SD-Organic</td>
<td>0.002</td>
<td>(0.395)</td>
<td>0.018</td>
<td>(0.484)</td>
</tr>
<tr>
<td>SD-Fairtrade</td>
<td>0.815**</td>
<td>(0.414)</td>
<td>0.868**</td>
<td>(0.409)</td>
</tr>
<tr>
<td>SD-Rainforest</td>
<td>0.066</td>
<td>(0.455)</td>
<td>0.066</td>
<td>(0.419)</td>
</tr>
<tr>
<td>SD-Carbon</td>
<td>0.007</td>
<td>(0.327)</td>
<td>0.023</td>
<td>(0.373)</td>
</tr>
<tr>
<td>Local*FT</td>
<td>-0.118</td>
<td>(0.205)</td>
<td>-0.242</td>
<td>(0.259)</td>
</tr>
<tr>
<td>Local*Org</td>
<td>-0.170</td>
<td>(0.217)</td>
<td>-0.167</td>
<td>(0.263)</td>
</tr>
<tr>
<td>Local*RA</td>
<td>-0.010</td>
<td>(0.229)</td>
<td>-0.019</td>
<td>(0.278)</td>
</tr>
<tr>
<td>Local*CT</td>
<td>0.493**</td>
<td>(0.221)</td>
<td>0.569**</td>
<td>(0.277)</td>
</tr>
<tr>
<td>Folgers*FT</td>
<td>-0.075</td>
<td>(0.225)</td>
<td>-0.131</td>
<td>(0.277)</td>
</tr>
<tr>
<td>Folgers*Org</td>
<td>0.133</td>
<td>(0.227)</td>
<td>0.301</td>
<td>(0.310)</td>
</tr>
<tr>
<td>Folgers*RA</td>
<td>-0.197</td>
<td>(0.209)</td>
<td>-0.218</td>
<td>(0.267)</td>
</tr>
<tr>
<td>Folgers*CT</td>
<td>0.255</td>
<td>(0.220)</td>
<td>0.295</td>
<td>(0.275)</td>
</tr>
<tr>
<td>Starbucks*FT</td>
<td>0.075</td>
<td>(0.223)</td>
<td>-0.076</td>
<td>(0.276)</td>
</tr>
<tr>
<td>Starbucks*Org</td>
<td>0.223</td>
<td>(0.214)</td>
<td>0.310</td>
<td>(0.273)</td>
</tr>
<tr>
<td>Starbucks*RA</td>
<td>-0.076</td>
<td>(0.224)</td>
<td>-0.093</td>
<td>(0.261)</td>
</tr>
<tr>
<td>Starbucks*CT</td>
<td>0.434**</td>
<td>(0.215)</td>
<td>0.440*</td>
<td>(0.252)</td>
</tr>
</tbody>
</table>

# parameter estimates 10 22 18 30

AIC 4012.7 4187.7 4009.5 4253.6

N choices 6912 6912 6912 6912

N respondents 432 432 432 432

***, **, and * indicate a p-value <0.01, between 0.01 and 0.05, and between 0.05 and 0.1, respectively. Model results based on 500 Halton draws.
go without, respectively. The parameter estimates for the local coffee purchase source are consistent with literature, which shows consumers value locally-branded foods (Remar, et al., 2016). Relative to Dunkin, the omitted reference category, Local brand has a positive, significant coefficient, meaning this sample prefers local coffee to Dunkin’. Folgers has a significant negative coefficient, demonstrating that it is less desirable than Dunkin.

Starbucks is not significant, meaning it has a similar preference to Dunkin’. Even though research analyzes Starbucks as a premium-priced brand, it is unsurprising that our sample of local shop visitors and purchasers has preferences for local (Haskova, 2015). We can make comparisons between Starbucks and Folgers and Local given these coefficients. Using the chi-squared test, we find Local is significantly preferred to Folgers (p value= 0.016). We find that Local is not significantly preferred to Starbucks (p value= 0.136). Folgers and Starbucks are not significantly different in terms of preference (p value= 0.136).

Dark roast had an insignificant positive coefficient for the reference, Dunkin’. In other results, a large majority of respondents had preferred medium roast to dark roast, so we did not expect significant preference for Dunkin’ dark roast.

Examining the four labels, USDA Organic has a significant positive coefficient, indicating that consumers prefer this label to no label. Carbon Trust and Rainforest Alliance have marginally significant positive coefficients. USDA Organic label is positive and significant, and Carbon Trust and Rainforest other labels are positive as well. This matches other studies (Abdu and Mutuku, 2021, Fuller, et al., 2022, Gallenti, et al., 2016, Maaya, et al., 2018, Van Loo, et al., 2015). Using the preliminary results of this study as a basis, results display that most of the sample purchased USDA Organic labeled products. This result is unsurprising.

Fairtrade is not significant, meaning consumers are indifferent to the Fairtrade label. Our
population is local coffee purchasers, meaning their preferences may be slightly different to all coffee purchasers, whom research shows are willing to pay premiums for Fairtrade (Hiscox, et al., 2011, Yang, et al., 2013). Other papers find that Fairtrade is second only to organic labeling in terms of highest WTP (Abdu and Mutuku, 2021, Fuller, et al., 2022, Gallenti, et al., 2016, Maaya, et al., 2018, Van Loo, et al., 2015).

Model II incorporates the interactions of brand with label. A likelihood ratio test reveals that this model does not have significantly better fit (p-value=0.404) compared to Model I. This tells us that the likelihood of the observed coefficients in the base model versus the model with interactions is not significantly different. Including these interactions means the coefficients of the main effects now reflect preferences for the omitted reference category Dunkin. Importantly, Local is no longer statistically significant, meaning Local and Dunkin, both without any labels, are equally preferable once interactions are allowed in the model. However, Folgers stays significant and negative, as well as the price and optout coefficients.

Coefficients for Organic, Fairtrade, Rainforest, and Carbon for Dunkin are all insignificant in Model II. This means that the presence of the label is not preferable specifically for Dunkin’. Other studies find positive WTP for labels like organic and Fairtrade, however they do not differentiate between specific brands when examining labels (Abdu and Mutuku, 2021, Fuller, et al., 2022, Gallenti, et al., 2016, Maaya, et al., 2018, Van Loo, et al., 2015). Among the interaction variables of Local, Starbucks, and Folgers with Fairtrade, USDA Organic, and Rainforest Alliance labels, most are not significant. However, for the Carbon Trust interactions with the local shop and Starbucks, there are significant positive coefficients. The different brands, then, only seem to work synergistically with the Carbon Trust label, the least trusted and purchased label according to respondents.
The corresponding mixed logit model variants without and with interactions appears in Model III and IV, respectively. Based on AIC, the mixed logit here has near equivalent fit compared to our conditional logit, with a likelihood ratio test also demonstrating equivalence (p-value=0.458, 8df). Another likelihood ratio test reveals that Model IV does not have significantly better fit (p-value=0.088) compared to Model I. This is showcased by the standard deviations (SD) of variables specific as random; most are not statistically significant. Fairtrade and Folgers are both marginally significant. In Model IV, the Local SD is also marginally significant. With respect to the main effects for price, optout, brand, and label, all the results are qualitatively similar to the outcomes of Model I.

Turning to Model IV, a likelihood ratio test reveals that Model IV does have significantly better fit (p-value=0.002) compared to Model III. This indicates that adding the brand*label interaction variables makes a better fit mixed logit model. Its main effects results (reflecting preferences for Dunkin) are similar to Model II. Interactions of the local shop or Starbucks with the Carbon Trust label have significant positive coefficient estimates like in the other models. Coffee brands, specifically local shops and Starbucks may be synergistically affected by inclusion of the Carbon Trust label according to these results.

Calculating WTP from the mixed logit Model III and IV involved is calculated based on equation (7). This shows the value assigned to each attribute relative to price and informs pricing and market segmentation in a population with heterogeneous preferences. WTP value for local coffee was insignificant, meaning the economic value is equivalent to Dunkin coffee. WTP for Folgers’ is significantly lower, $5.18 less than Dunkin’.

Examining WTP first based on the model without interactions shows the value of the labels without differentiating brand. At $1.33, WTP is highest for organic. WTP is marginally
significant for Rainforest Alliance and Carbon Trust, at $0.61 and $0.73 more for the label than without, respectively. Fairtrade is not significant. Literature finds that consumers will pay premiums for all of these labels, in line with our findings excluding Fairtrade (A. Birkenberg, 2021, Abdu and Mutuku, 2021, Yang, et al., 2013). We expect that Fairtrade was not significant based on our sample demographic being specifically local purchasers.

The preference for labels across brand types appears in the bottom half of Table 2.7. WTP for all labels in Dunkin are not significantly different from 0 in the model with interactions, though in the base model USDA Organic had been significant and Rainforest Alliance and Carbon trust marginally so. These results may be because our sample demographic was specifically local shop purchasers who may have different wants (equating to different caps on price premium willingness to pay and accept).

Table 2.7. Willingness to Pay Results

<table>
<thead>
<tr>
<th></th>
<th>Mixed Logit</th>
<th>With Brand Interactions</th>
<th>Local WTP (Dunkin)</th>
<th>Starbucks WTP</th>
<th>Folgers WTP</th>
<th>Test equal WTP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WTP SE</td>
<td>WTP SE</td>
<td>WTP SE</td>
<td>WTP SE</td>
<td>WTP SE</td>
<td>WTP SE</td>
</tr>
<tr>
<td>Local</td>
<td>1.22</td>
<td>(1.64)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folgers</td>
<td>-5.18**</td>
<td>(2.89)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starbucks</td>
<td>-1.54</td>
<td>(1.65)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dark</td>
<td>0.09</td>
<td>(0.34)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labels</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organic</td>
<td>1.33***</td>
<td>(0.34)</td>
<td>0.84 (0.79)</td>
<td>0.05 (0.81)</td>
<td>2.32***</td>
<td>(0.85)</td>
</tr>
<tr>
<td>Fairtrade</td>
<td>-0.12</td>
<td>(0.37)</td>
<td>0.35 (0.80)</td>
<td>-0.80 (0.82)</td>
<td>-0.01</td>
<td>(0.85)</td>
</tr>
<tr>
<td>Rainforest</td>
<td>0.61*</td>
<td>(0.34)</td>
<td>0.95 (0.82)</td>
<td>0.87 (0.85)</td>
<td>0.51</td>
<td>(0.86)</td>
</tr>
<tr>
<td>Carbon</td>
<td>0.73**</td>
<td>(0.35)</td>
<td>-0.61 (0.84)</td>
<td>2.10** (0.90)</td>
<td>1.49*</td>
<td>(0.79)</td>
</tr>
</tbody>
</table>

*Results are based on Model III and IV in Table 6.

Standard errors are calculated with Delta method. ***, **, and * indicate a p-value <0.01, between 0.01 and 0.05, and between 0.05 and 0.1, respectively. Model results based on 500 Halton draws. Letters show a difference that’s statistically significant (p<0.05) between A: Dunkin vs Local, B: Dunkin vs. Starbucks, C: Dunkin vs. Folgers, D: Local vs Starbucks, E: Local vs Folgers, and F: Starbucks vs Folgers.
For Local bags compared to Dunkin, respondents were willing to pay $2.10 more for inclusion of the Carbon Trust label. No other labels had significant WTP for the local bag. For Starbucks bags, they were WTP $2.32 more for the USDA Organic label, as compared to the Dunkin’ reference without a label. Respondents had marginally significant WTP, $1.49, for Carbon Trust labeled Starbucks coffee as well. The other labels did not elicit WTP on Starbucks bags. For Folgers, WTP is $2.28 more for USDA Organic, but the other three labels did not significantly different WTP from Dunkin.

Across brands, differences in WTP for labels existed. The sample were WTP premiums for USDA Organic on Starbucks and Folgers bags but not on their local shop bag. The sample was WTP marginally significant premiums for the Carbon Trust label on the local shop and Starbucks bag, but not on the Folgers bag. Across the four brands, the sample was not WTP significant premiums for the Fairtrade or Rainforest Alliance labels.

The significant differences in WTP for Carbon Trust label between Dunkin’ and the local shop can be discussed. Comparable recent papers found that coffee drinkers were okay with paying for sustainability labels, and they were most accepting of paying for some type of organic labeling (Abdu and Mutuku, 2021, Maaya, et al., 2018, Van Loo, et al., 2015). Another recent paper did find that without brand interactions, consumers would pay for carbon labeling (specifically Carbon neutral) (A. Birkenberg, 2021). As we see in Table 7, all labels had insignificant coefficients on Dunkin’ reference bag. This indicates that inclusion of sustainability labels did not have significant positive effects on Dunkin’ price premiums, possibly due to our sample being restricted to local purchasers. WTP is significant and positive for USDA Organic interactions with Starbucks and Folgers, indicating a higher WTP for the combined brands and label versus the Dunkin’ reference. WTP is $2.32 and $2.28 more, respectively, for each
combination. The combination of local coffee bag brands and the Carbon Trust label may have a synergistic effect on WTP. They were willing to pay significantly more, $2.10, for local shop, Carbon Trust-labeled coffee, versus Dunkin’.

To better validate these results, we ran several supplementary models incorporating interaction variables between either the brands or the labels and other variables. These models are in the Appendix. The coffee bag brand attribute may not have differentiated sustainability preferences between local and national brand coffees fully as some respondents may have chosen national brands as their local coffee shop based on their proximity as a geographically local option. To account for this, in Table B.1 in the Appendix, there are conditional and mixed logit models with interaction variables of the labels with the local shop and the number of local shop locations as specified by each individual respondent. This local number in some ways differentiates between local shops of different scales: one location is an independent shop, several locations may indicate a regional chain, and many locations may indicate a national chain. Incorporation of this variable gives some reference point for how much the participant-specified local shop impacted preferences for the labels. In the models, the interaction of local shop number and local shop* label is not statistically significant for any combinations. So, the number of locations for the subjective ‘local’ shop didn’t seem to influence the synergistic values of local shop and the different labels. Participant interpretation of the number of local locations may not fully differentiate preferences between chain and local coffee brands, but we can assume that subjective interpretation of ‘local shop’ was not significantly affected by the number of shop locations based on these results.

Another interaction model including interactions with the local purchasing segments (Non-local as the reference category, and Local purchasers and Local frequenters included like in...
demographic results) and the different labels was run supplementarily, and it is shown in
Appendix Table B.2. Again, Non-local purchasers: purchased local coffee 5x or less per year;
local purchasers: purchased local coffee 6 to 12 times per year, and local frequenters: purchased
local coffee weekly or more. This model was run to account for any effects that different types of
local coffee shop visitors had on preferences for the sustainability certifications. Local
purchasers and local frequenters had positive and significant coefficients for local as expected.
Local purchasers’ interaction variables with Rainforest Alliance were significant and negative.
Local frequenters’ interaction variable with Fairtrade was positive and a significant value. Here,
it should be noted that this was the only positive synergistic effect between a local segment and a
label. So, results showed there may not be trends towards synergistic preferences for being a
local purchaser and preferring sustainability labels.

A final supplementary model was done including conditional and mixed logits that had
interactions of the brands (Local, Starbucks, and Folgers) and preference for purchasing whole
bean coffee. This is shown in Appendix Table B.3. The reference was the Dunkin’ bag which
contained ground coffee beans. In DCE instructions, participants were told choice sets included
options for ground coffee bags. In pre-DCE questions, 71% of the sample indicated that they
regularly purchased ground coffee. 21% indicated they regularly purchased whole bean coffee.
4% indicated they regularly purchased both. Interactions of brand*whole bean purchase form are
included in analysis to measure potential effects of preference towards different purchase forms’
impact on brand choice. Results showed positive, significant coefficients for Local and Starbucks
brands (both models) in combination with preferring to purchase whole beans. Results showed a
no significant coefficients for any of the brands in combination with preferring to purchase
whole beans. These results indicated preferences for whole bean coffee over ground (like the
Dunkin’ reference) did not have a significant impact in combination with different brands.

2.5. Conclusion and Implications

Certified labels demonstrate production practices and information often shown to be valuable to consumers. This is important in coffee, where certifications may be more expensive (Rueda and Lambin, 2013). Local/independent coffee retailers must decide whether this additional expense is justifiable in terms of adding value to their clientele, and ultimately the net effect to profitability.

This study aims to measure preferences and WTP for Fairtrade, USDA Organic, Rainforest Alliance, and Carbon Trust coffees and how they may change with the coffee brand. Our primary sample demographic was middle aged, college educated, white adults that drink coffee. What results from this population suggest is that consumers display a preference for local coffee but are not willing to purchase this coffee for a higher price than Dunkin’ or other national brands. Results showed a strong preference and WTP for USDA Organic labeling, in line with other papers. Importantly, only the Carbon Trust label, the label respondents were least familiar with, displayed synergistic positive effects in combination with Local and Starbucks coffee.

Implications of these results point towards a possible benefit to local coffee shops in trying to sell coffee bags with lesser-known sustainability labels, such as Carbon Trust. It might be beneficial to measure WTP for sustainability claims and other lesser-known sustainability or ethicality initiatives among a local coffee drinker demographic. Results of this study indicate that local coffee retailers might focus on enhancing selling points related to their locality instead of incorporating new or more sustainability certifications as the only one that provides additional synergistic value is a label not commonly seen in the industry. Incorporation of sustainability certifications, if not pre-existing, may be less important than an emphasis on locality in terms of
consumer WTP. If local shops wish to offer coffees with lesser-known labels like Carbon Trust, the labels in combination with branding as a local product might impact consumer preferences in a positive and synergistic way.

Several limitations exist within the study. The sample size used in the results and analysis was relatively small. The study also focused solely on preferences and WTP among bagged coffee beans, not other forms of coffee like ready-to-drink options. Results did not indicate that preferences for whole over ground coffee beans had an impact in combination with the different brands. The coffee bag brand attribute may not have differentiated sustainability preferences between local and national brand coffees fully as some respondents may have chosen national brands as their local coffee shop based on their proximity as a geographically local option. Results did not indicate that the estimated number of locations of the local shop affected their preference towards sustainability labels.
Chapter 3. Conclusion and Implications

This study measured consumer willingness to pay for certifications (Fairtrade, USDA Organic, Rainforest Alliance, Carbon Trust) and how preferences for them differed between national brands (Dunkin, Folgers, Starbucks) and a local coffee shop specified by the individual respondent. Our contribution was to determine how brands impacted WTP for certified sustainable bags of coffee and, further, whether locality acts synergistically and positively with sustainability labels in this context. Results indicated a preference for branded bagged coffee, especially local shop brands. Importantly, the Carbon Trust label, the label respondents were least familiar with, displayed synergistic positive effects in combination with branded local and Starbucks coffee, and consumers were WTP a premium for locally labeled Carbon Trust bagged coffee. These results can inform local coffee retailers that further investment into sustainably-labeled coffees may not be the most effective method of differentiation or increasing profit.

Results of this study did not allow us to provide any overarching advice on other means of differentiation local coffee shops could use to sell coffee beans such as advising closer focus on ‘locality’ as a branding and marketing focal point. However, the findings suggest several promising avenues for future research. Understanding how multi-labeling impacts WTP for local coffee could help better explain preferences. Understanding preferences for coffee drinks and ready-made coffees could broaden research conclusions. This line of research could help local coffee shops craft more effective marketing strategies by highlighting the specific aspects of their identity and sustainability practices that resonate most with consumers.

Additionally, future studies could examine the specific taste, atmospheric, and convenience attributes that drive consumer preferences for local coffee beans by including them as interaction variables. Convenience was a consideration for this group of respondents.
according to results. Future research could investigate how factors like location, accessibility, and service speed impact customer choices and their willingness to pay. Understanding the balance between quality and convenience that local consumers seek could help coffee shops optimize their operations to better meet customer expectations. Moreover, exploring how local coffee shops can leverage community engagement and local culture as differentiation strategies could provide additional insights.

In conclusion, with the competition of thousands of other coffee shops in the U.S., it is crucial that owners understand preferences of their customers and the factors contributing to them. While sustainably labeled coffees garner a premium in US markets, it doesn’t appear that there is added synergistic benefit to local coffee shop owners specifically through incorporating new labels onto bagged coffee. Indeed, the findings of this study suggest that local coffee retailers should prioritize emphasizing their coffee beans’ locality over adding new or more sustainability certifications, as the only certification offering additional synergistic value is one not commonly seen in the industry. If sustainability certifications are not already in place, focusing on local identity when selling beans may be more critical for influencing consumer willingness to pay than new certifications. For local shops considering selling beans with lesser-known labels like Carbon Trust, combining these labels with strong local branding could positively and synergistically impact consumer preferences.
Appendix A. Institutional Review Board Approval

TO: LSUAG | Dept | Agricultural Economics and Agribusiness | CC00935
FROM: Michael Keenan
Chair, Institutional Review Board
DATE: 19-Jan-2024
RE: IRBAG-23-0052
TITLE: Preferences for Coffee and Charitable Donations
SUBMISSION TYPE: Initial Application
Review Type: Exempt
Risk Factor: Minimal
Review Date: 19-Jan-2024
Status: Approved
Approval Date: 19-Jan-2024
Approval Expiration Date: 18-Jan-2027
Re-review frequency: (three years unless otherwise stated)
Number of subjects approved: 1000
LSU Proposal Number:

By: Michael Keenan, Chair

Continuing approval is CONDITIONAL on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants, including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
8. SPECIAL NOTE: When emailing more than one recipient, make sure you use bcc. Approvals will automatically be closed by the IRB on the expiration date unless the PI requests a continuation.

*All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents.

Mike Keenan O 225-578-1708
209 Knapp Hall
Baton Rouge, LA 70803

O 225-578-1708
F 225-578-4443
### Appendix B. Supplemental Materials Related to Chapter 2

Table B.1. Local Shop Number of Locations Interaction Model

<table>
<thead>
<tr>
<th></th>
<th>I: Cond. Logit w/ Interactions</th>
<th>II: Mixed Logit w/ Interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef.</td>
<td>SE</td>
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<tr>
<td>Price</td>
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<td>(0.010)</td>
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<tr>
<td>Optout</td>
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</tr>
<tr>
<td>Local</td>
<td>0.326*</td>
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</tr>
<tr>
<td>Folgers</td>
<td>-0.589***</td>
<td>(0.090)</td>
</tr>
<tr>
<td>Starbucks</td>
<td>-0.020</td>
<td>(0.081)</td>
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<tr>
<td>Dark Roast</td>
<td>0.040</td>
<td>(0.052)</td>
</tr>
<tr>
<td>Organic</td>
<td>0.277***</td>
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<tr>
<td>Fairtrade</td>
<td>0.006</td>
<td>(0.070)</td>
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<tr>
<td>Rainforest</td>
<td>0.088</td>
<td>(0.076)</td>
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<td>432</td>
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Table B.2. Local Purchasing Segments Interaction Models

<table>
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<tr>
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<th>I: Cond. Logit w/ Interactions</th>
<th>II: Mixed Logit w/ Interactions</th>
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<td>Rainforest</td>
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<td>0.188</td>
<td>(0.129)</td>
</tr>
<tr>
<td>Localfreq*FT</td>
<td>0.355**</td>
<td>(0.143)</td>
</tr>
<tr>
<td>Localfreq*org</td>
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<td>(0.137)</td>
</tr>
<tr>
<td>Localfreq*RA</td>
<td>-0.140</td>
<td>(0.136)</td>
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<tr>
<td>Localfreq*CT</td>
<td>0.192</td>
<td>(0.139)</td>
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<td>26</td>
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<tr>
<td>AIC</td>
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<tr>
<td>N choices</td>
<td>6912</td>
<td></td>
</tr>
<tr>
<td>N respondents</td>
<td>432</td>
<td></td>
</tr>
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</table>

Reference category is Non-local (those who purchased local coffee five times or less per year) in which Local Purchaser (purchased local coffee at least six times a year and at most monthly) and Local Frequentener (purchased local coffee weekly or more) both equal 0.
<table>
<thead>
<tr>
<th></th>
<th>I: Whole Bean Cond. Logit</th>
<th>II: Whole Bean Mixed Logit</th>
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<td>(0.010)</td>
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<td>Optout</td>
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<td>(0.157)</td>
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<td>Local</td>
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<td>(0.075)</td>
</tr>
<tr>
<td>Folgers</td>
<td>-0.604***</td>
<td>(0.089)</td>
</tr>
<tr>
<td>Starbucks</td>
<td>-0.065</td>
<td>(0.081)</td>
</tr>
<tr>
<td>Dark Roast</td>
<td>0.026</td>
<td>(0.052)</td>
</tr>
<tr>
<td>Organic</td>
<td>0.208***</td>
<td>(0.056)</td>
</tr>
<tr>
<td>Fairtrade</td>
<td>-0.020</td>
<td>(0.059)</td>
</tr>
<tr>
<td>Rainforest</td>
<td>0.101*</td>
<td>(0.056)</td>
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<td>0.107*</td>
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<td>SD-Local</td>
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<td>SD-Starbucks</td>
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<td>0.627</td>
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<td>SD-Organic</td>
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<td>(0.405)</td>
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<td>SD-Fairtrade</td>
<td>0.821*</td>
<td>(0.419)</td>
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<td>0.069</td>
<td>(0.453)</td>
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<td>(0.329)</td>
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<td>Local*Wholebean</td>
<td>0.286</td>
<td>(0.355)</td>
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<td>Starbucks*Wholebean</td>
<td>0.585</td>
<td>(0.380)</td>
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<td>Folgers*Wholebean</td>
<td>-0.093</td>
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</table>

“Wholebean” are those who buy whole bean coffee exclusively or both whole bean and ground coffee.
Figure B.1. This is an example choice set. Option 1 brand display shows the piped logic instead of a brand name in Qualtrics XM. Participants would see their specified local coffee shop or [Your Local Coffee Shop] there if they did not enter a specific coffee shop.
Appendix C. Survey Instrument

Adapted from Qualtrics

Start of Block: Consent
Consent
SURVEY CONSENT FORM

drinkfreq How often do you drink coffee that you make (e.g., brewed, iced, espresso, etc.) (exclude ready-to-drink coffee drinks)?
   Never (1)
   Less than once a month (2)
   Monthly (3)
   Weekly (4)
   Multiple times per week (5)
   Daily (6)
   Multiple times per day (8)

localnondunkstarbs Have you visited a coffee shop in your local area (within a reasonable distance to your permanent residence) that was not Dunkin' or Starbucks in the last 3 months?
   Yes (1)
   No (2)

localname Please replace the text below with the name of the local coffee shop you most frequently visit in the space below. This can include regional chain coffee shops that are local to you (e.g., Ziggi’s, Black Rock, The Human Bean, CC’s Coffee, etc.). Please do not include Dunkin’ or Starbucks as your local choice for survey purposes.

________________________________________________________________

divlocalcount As far as you know, how many locations does [Response to Localname] have?
   1 (1)
   2-4 (2)
   5-10 (3)
   More than 10 (4)
   I don't know (6)

End of Block: Qualifier
Start of Block: Qualify
instruct You qualify to participate in the full study. Please continue to answer the survey questions.
Note, the survey first asks about charitable donations and then coffee. These two sections are unrelated, so please try to treat them as separate.

End of Block: Qualify
Start of Block: Qualifyextraincentive
instructextramoney You qualify to participate in the full study. Please continue to answer the survey questions.
Note, the survey first asks about charitable donations and then coffee. These two sections are unrelated, so please try to treat them as separate.

WE EXCLUDED DONATION SURVEY FROM THIS SURVEY IN APPENDIX

Start of Block: LabelsLocal

labelinfo Please read about the following labels sometimes seen on coffee before answering the next few questions

labelfamiliar Prior to this survey, were you familiar with any of the following food and product certifications/labels?

☐ Fairtrade (1)

☐ Rainforest Alliance (2)

☐ USDA Organic (3)

☐ Carbon Trust (4)

☐ I am not familiar with any of these (6)

labpurchase About how often do you purchase food or products with the following certifications/labels?
   Never (1) Rarely (2) Sometimes (3) Often (4) Always (5) I don't know (8)
Regardless of whether you buy these labels, what do you think is the primary benefit of each?

Better taste (1) Health reasons (2) Sustainable/Ethical reasons (3) No/little benefit (4) I don't know (5)

Fairtrade (1) O O O O O
Rainforest Alliance (2) O O O O O
USDA Organic (3) O O O O O
Carbon Trust (4) O O O O O

How much do you agree or disagree with the following statements:

"I think ______ certification is trustworthy."

Strongly agree (1) Agree (2) Neither (3) Disagree (4) Strongly disagree (5)

Fairtrade (1) O O O O O
Rainforest Alliance (2) O O O O O
USDA Organic (3) O O O O O
Carbon Trust (6) O O O O O

Compared to national chains like Starbucks or Dunkin', local coffee shops...

Strongly agree (1) Agree (2) Neither agree nor disagree (3) Disagree (4) Strongly Disagree (5)

Are more expensive (1) O O O O O
Have better tasting coffee (2) O O O O O
Are more convenient (3) O O O O O
Have better atmosphere/sense of...
Coffee_instruction The next few questions are intended to check how well you understand the details of the scenarios you're about to answer.

TF1 The 12-ounce bags of coffee in each scenario have four different characteristics: the coffee company, coffee roast, its certifications/labels, and its price.
   True (1)
   False (2)
   I don't know (3)

TF2 If I'm not sure how to answer a scenario, I should pick "I'd prefer not to buy any of these".
   True (1)
   False (2)
   I don't know (3)

TF3 I will answer several scenarios and the information (e.g., company, roast, certifications/labels, and prices) will change in each scenario, but each bag shown is the same size (12 oz).
   True (4)
   False (5)
   I don't know (6)

Reminder: There are four different characteristics: company, roast, certification/labels, and prices. Pick “I’d prefer not to buy any of these” if you are not sure how to make choices. The characteristics will change across scenarios but the size of coffee bag remains 12 oz.

B1_1
Option 1 Option 2 Option 3
Dunkin' Folgers Starbucks
$7.95 $9.95 $9.95
Based on these options, which bag of coffee do you prefer?
Option 1
Option 2
Option 3
I'd prefer not to buy any of these

B1_9
Option 1 Option 2 Option 3
Starbucks Your Local Coffee Shop Folgers
$13.95 $5.95 $9.95
Based on these options, which bag of coffee do you prefer?
Option 1
Option 2
Option 3
I'd prefer not to buy any of these

B1_16
Option 1 Option 2 Option 3
Dunkin' Folgers Your Local Coffee Shop
$13.95 $7.95 $7.95
Based on these options, which bag of coffee do you prefer?
Option 1
Option 2
Option 3
I'd prefer not to buy any of these

B1_17
Option 1 Option 2 Option 3
Folgers Dunkin' Your Local Coffee Shop
Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these
Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Starbucks Your Local Coffee Shop Dunkin'
$11.95 $11.95 $5.95

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Starbucks Your Local Coffee Shop Dunkin'
$11.95 $11.95 $5.95

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Your Local Coffee Shop Folgers Dunkin'
$5.95 $11.95 $5.95

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Folgers Dunkin' Starbucks
$13.95 $5.95 $9.95

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Folgers Dunkin' Starbucks
$13.95 $5.95 $9.95

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Dunkin' Starbucks Folgers
$9.95 $9.95 $7.95

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Dunkin' Starbucks Folgers
$9.95 $9.95 $7.95

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Starbucks Dunkin' Folgers
$5.95 $9.95 $13.95

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Starbucks Dunkin' Folgers
$5.95 $9.95 $13.95

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these

Your Local Coffee Shop Starbucks Dunkin'
$11.95 $5.95 $13.95

Based on these options, which bag of coffee do you prefer?

Option 1
Option 2
Option 3
I'd prefer not to buy any of these
B4_15
Option 1 Option 2 Option 3
Dunkin' Folgers Starbucks

$7.95 $7.95 $13.95
Based on these options, which bag of coffee do you prefer?
Option 1
Option 2
Option 3
I'd prefer not to buy any of these

protestresponse4 Why didn't you select any of the bags of coffee in the previous scenarios?
I don't think any of the bags were worth the price shown (1)
I would prefer to spend the money elsewhere. (2)
I am unsure and need more information to make a choice. (3)
I object to the way the question was asked. (4)
I object to buying products from Starbucks, Folgers, Dunkin', and/or local private coffee shops. (5)
Other (please specify): (6) __________________________________________________

End of Block: CoffeeDCEB4new
Start of Block: CoffeeDCEB5new

12ozremind Remember that each bag is for the same amount of ground coffee (12 oz). Also please try not to compare across scenarios.
B5_7
Option 1 Option 2 Option 3
Folgers Starbucks Your Local Coffee Shop

$9.95 $7.95 $11.95
Based on these options, which bag of coffee do you prefer?
Option 1
Option 2
Option 3
I'd prefer not to buy any of these
B5_10
Option 1 Option 2 Option 3
Starbucks Your Local Coffee Shop Folgers
$13.95 $11.95 $5.95
Based on these options, which bag of coffee do you prefer?
Option 1
Option 2
Option 3
I'd prefer not to buy any of these
B5_11
Option 1 Option 2 Option 3
Starbucks Your Local Coffee Shop Dunkin'
$7.95 $7.95 $11.95
Based on these options, which bag of coffee do you prefer?
Option 1
Option 2
Option 3
I'd prefer not to buy any of these
B5_18
Option 1 Option 2 Option 3
Your Local Coffee Shop Folgers Dunkin'

$11.95 $13.95 $5.95
Based on these options, which bag of coffee do you prefer?
Option 1
Option 2
Option 3
I'd prefer not to buy any of these

protest5 Why didn't you select any of the bags of coffee in the previous scenarios?
I don't think any of the bags were worth the price shown (1)
I would prefer to spend the money elsewhere. (2)
I am unsure and need more information to make a choice. (3)
I object to the way the question was asked. (4)
I object to buying products from Starbucks, Folgers, Dunkin', and/or local private coffee shops. (5)
Other (please specify): (6) __________________________________________________

End of Block: CoffeeDCEB5new

59
What is your typical spending on coffee (just bagged or whole bean, not pre-made drinks) per month?
- $10 or less (1)
- $11-$30 (2)
- $31-$50 (3)
- More than $50 (4)
- I don't know (6)

Which of the following reasons is the most important reason why you drink coffee?
- Habit of drinking coffee (1)
- Caffeine (2)
- The taste (3)
- Atmosphere/people there (5)
- Other (4)

How do you typically make your coffee? (Select all that apply)
- Automatic brewed or automatic drip (1)
- French press (2)
- Stovetop (3)
- K-cup (4)
- Cold brewed or cold dripped (5)
- Espresso (6)
- Instant coffee (11)
- Other (please specify): (7)

What type of coffee roast do you typically drink?
- Not sure (1)
- Light roast (2)
- Medium roast (3)
- Dark/French roast (4)
- Flavored roast (5)

Do you typically purchase ground coffee or whole bean coffee? (Select all that apply)
- Ground (1)
- Whole bean (2)

Which brands, if any, do you typically buy ground or whole bean coffee from?
- Folgers (1)
- Maxwell House (2)
- Tim Horton's (10)
- Lavazza (11)
- Caribou Coffee (12)
- Peet's Coffee (5)
- Starbucks (6)
- Dunkin' (7)
- Grocery store's generic brand (e.g, Great Value etc.) (4)
- Small company's brand (e.g., local coffee shop) (8)
- Other (9)

Which of these sources do you most frequently buy ground or whole-bean coffee from? (exclude online purchases, if you make any)
- Local, independent coffee shop (1)
- Grocery store (2)
- National chain coffee shop (7)
- Regional chain coffee shop (4)
- Convenience store (8)

About how often do you buy bags of coffee?
- Never (1)
- Weekly (5)
- Monthly (4)
- Year (3)
- 1-5 times (2)
- 6-10 times (3)
- More often (5)

About how often do you purchase coffee from the following locations?
- Never (1)
- Weekly (5)
- Multi times (4)
- Monthly (4)
- Year (3)
- 1-5 times (2)
- 6-10 times (3)
coffee shops (1)  o o o o o o
Chain coffee shops (e.g.,
Dunkin, Starbucks, etc.)

(2)  o o o o o o
Convenience stores/grocery stores/gas stations/fast food restaurants (e.g., 7-Eleven, McDonald's, etc.)

(6)  o o o o o o
End of Block: Coffee Characteristics
Start of Block: Other Coffee

roasterinit Local/independent coffee shops sometimes choose to show their support for several initiatives but may have limited funds to do so. Which would you most prefer to see them support? Rank most preferred as 1 and least preferred as 4. Please put a number, 1 to 4, next to every choice.

____ Support charities in the local community (1)
____ Buy coffee that helps the well-being of the coffee farmers (2)
____ Buy coffee that helps protect the environment near the coffee farms (3)
____ Don’t support such efforts and instead reduce prices (4)

3rdpartycert Third party certification means a product has been reviewed and found compliant with certain safety, sustainability, and/or quality standards. Knowing this, how much more likely would you be to buy products with a sustainability label that was third-party certified?

Not more likely at all (1)
Slightly more likely (2)
Moderately more likely (3)
Much more likely (4)

enviroatt State how much do you agree or disagree with the following statements.

Strongly agree (1) Agree (2) Neither agree nor disagree (3) Disagree (4) Strongly disagree (5)

I am very conscious of sustainability, ethical, and environmental issues.

(1)  o o o o o o
I go out of my way to buy sustainable products.

(2)  o o o o o o
I go out of my way to have sustainable habits (e.g., refillable water bottle, reusable shopping bag, etc.)

(3)  o o o o o o
End of Block: Other Coffee
Start of Block: Demographics

demoinstruct Please tell us a bit more about yourself so we can know more about the characteristics of coffee drinkers.

age What is your age?
▼ 18-24 (1) ... 75+ (7)

gender What is your gender?

edu What is the highest level of education you have completed?

Some high school (1)
employment What is your current employment status? (Select all that apply)
dependents How many dependents are currently in your household?
marital What is your marital status?
race Which race do you most identify with?
hispanic Are you of Hispanic, Latino, or Spanish origin?
income What was your total household income before taxes in 2022?
state In which state do you currently reside?
▼ Alabama (1) ... I do not reside in the United States (53)
US Zip Code What is your US Zip Code?
__________________________________________________
infograph If you would like to see a 1-page summary of the results of the coffee portion of this study, please write your email in the space below
Email: (1) _________________________________________
questioncomment Thank you for sharing your time with us today! Please feel free to share any comments, questions, or suggestions you may have in the space below.
________________________________________________________________
References


Spence, C., and F.M. Carvalho (2020) "The coffee drinking experience: Product extrinsic (atmospheric) influences on taste and choice." In Food Quality and Preference. pp. 103.


Vita

Mary Olivia Broussard is a research assistant pursuing a master’s degree in agricultural economics with a concentration in agribusiness management at Louisiana State University’s Department of Agricultural Economics. She anticipates graduating, degree-only, in August 2024. Her research focuses on market preferences for sustainable coffee and willingness to pay for sustainability. She will work in food manufacturing sales beginning May 2024.