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Consumers' Valuation for Local Foods: The Case of "Alaska Grown"

Qiujie Zheng, Rodolfo M. Nayga, Jr., and Zhifeng Gao

We use a choice experiment to elicit consumers' preferences and willingness to pay (WTP) for lettuce with the "Alaska Grown" label, taking into account its interactive effects with the organic and hydroponic grown claims. We test whether providing information about local food benefits affects consumers' WTP for the Alaska Grown label. The results show that consumers are willing to pay a premium for lettuce with the Alaska Grown label; providing information further increases their WTP. However, the information effect is limited or negative if organic or hydroponic claims are present on the locally grown foods.

Key words: hydroponic practices, information effects, locally grown labels, organic claims, social preferences

Introduction

Over the past decade, there has been a movement toward the consumption of locally produced foods, leading to growth in the local food system. Consumers have shown an increasing interest in local foods, often willing to pay premiums for foods labeled as "locally grown" (Martinez et al., 2010). In the United States, many states administer "locally grown" certification programs to promote foods grown within the state's boundaries (Carpio and Isengildina-Massa, 2009). All 50 states have established agricultural product promotion programs (Onken and Bernard, 2010; Bosworth, Bailey, and Curtis, 2015). Many state-level programs feature marketing campaigns and promotional activities to disseminate information and advertise local foods, catering to consumers' growing interests and supporting small-scale local farmers (Onken and Bernard, 2010; Onken, Bernard, and Pesek, 2011).

Consumers value local foods for various reasons, including taste and freshness, caring about the origins of food sources, concerns about the environmental impacts of production and distribution, and willingness to support the local economy (Brown, 2003). Food retailers also promote locally produced foods for their taste, flavor, and potential benefits (Bosworth, Bailey, and Curtis, 2015). Studies have emphasized that consumers need to be informed about the advantages of local food production and must believe in its relevance before developing an intention to purchase it (Sirieix et al., 2013). Providing information about the benefits of specific food attributes can potentially help increase consumers' willingness to accept or pay premiums for those attributes (Lusk and Schroeder, 2004; Napolitano et al., 2010).

Qiujie Zheng (corresponding author, qiujie.zheng@maine.edu) is an associate professor in the Maine Business School at the University of Maine. Rodolfo M. Nayga, Jr., is a professor and department head in the Department of Agricultural Economics at Texas A&M University and an adjunct professor at Korea University. Zhifeng Gao is a professor in the Food and Resource Economics Department at the University of Florida.
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Meanwhile, food choices made by consumers often occur within social contexts. Previous studies have revealed that consumers are willing to pay premiums for certain origin and production methods, motivated not only by personal health benefits but also by altruistic goals, such as supporting the environment, local farmers, and the local economy (Bosworth, Bailey, and Curtis, 2015; Hasselbach and Roosen, 2015; Meas et al., 2015; Chen et al., 2018). Hence, consumers' concerns for the well-being of others may significantly influence the variability in their product preferences.

In this article, we use the "Alaska Grown" label as a case to estimate consumers' willingness to pay (WTP) for local foods. We also determine the extent to which providing information about the benefits of local food boosts their WTP for locally grown foods. Besides, we investigate the interactive effects of consumers' WTP for locally grown labels with claims of specific production methods, namely USDA organic and hydroponically grown, two labels especially relevant to Alaska consumers' fresh produce choices. To our knowledge, there is a limited understanding of how information about the benefits of local food impacts consumers' WTP for locally grown produce that may carry organic or hydroponic labels. Research that examines the interactive effects between locally grown labels and production claim methods is also limited.

This article contributes to the literature on preferences for local foods by examining the effect of information on consumers' WTP for locally grown foods in the presence of organic or hydroponic claims. Hydroponic growing methods have been emerging and are practiced by local farmers or entrepreneurs in recent years to target niche markets (McCoy, 2020; Sinclare, 2021). In Alaska, hydroponic methods have also gained popularity over the past few years, potentially offering Alaskans an extended season for accessing fresh produce. However, consumers' preferences for products produced using this method are not well understood, and businesses face pressure to meet costs and satisfy consumers. To our knowledge, few studies have explored consumers' WTP for hydroponic produce in the context of other labels, such as organic or local (Gilmour et al., 2019; Fu, 2021), but they did not investigate the interactive effects between hydroponic and locally grown labels. Given that the hydroponic growing method can improve Alaskans' accessibility to fresh produce, it is meaningful to include this attribute in the study to understand consumers' preferences for the hydroponic growing method claim and its interactive effect with the locally grown label.

Another contribution of this research is that we explore how consumers' social preferences influence their WTP for locally grown labels and production method claims. We adopt the methodology from Murphy, Ackermann, and Handgraaf (2011) to gauge consumers' social preferences. Specifically, we assess their decision making when allocating resources between themselves and another person and analyze how this impacts their WTP for the local, organic, or hydroponic labels.

Last, this is the first study examining consumers' preferences for local foods in Alaska. Alaska's unique geographical location significantly influences its food supply. Of the $2 billion of food Alaskans purchase, about 95% is shipped from the Lower 48 states, Mexico, Europe, and Asia through extended supply chains (Meter and Goldenberg, 2014). Consequently, Alaska's food supply is vulnerable to supply chain disruptions and natural disasters. A stronger local food system could improve the resilience of the state's food supply. However, understanding Alaskan consumers' WTP for locally grown foods and identifying potential marketing and communication strategies are critical before promoting local food in Alaska. This information is crucial for stakeholders, helps strengthen the local food network, and, in the long run, enhances the resilience of Alaska's food supply.

We conducted a choice experiment to elicit consumers' preferences for lettuce with different attributes—including locally grown labels, organic claims, and hydroponic practices—using data collected through an in-person survey at farmers' markets and hypermarket superstores in Anchorage, Alaska. The findings indicate that consumers are willing to pay a premium for lettuce labeled as "Alaska Grown" and that providing additional information about the local food benefits further increases their WTP. However, the effect of information is limited or negative if organic or hydroponic claims accompany locally grown labels. These results can help the local agribusiness community understand consumer demand for food products labeled as local, organic, and hydroponic. Additionally, the findings reveal how information and social preferences affect consumer choices, providing insights into effective production and marketing strategies.

Background and Literature Review

Alaska's remote location and associated climate have shaped its agricultural industry and the organization of its food supply. Despite being the largest state in the United States, Alaska's agricultural sector remains one of the smallest. In 2021, Alaska's agricultural production and processing industries contributed 2.3% of the state's GDP (University of Arkansas Division of Agriculture, 2023). According to the USDA National Agricultural Statistics Service (NASS) 2017 Census of Agriculture, 990 farms operated on 849,753 acres of farmland in Alaska (US Department of Agriculture, 2017). The low cost of fuel and transportation in history, the relatively small state population, and urbanization combined with a general lack of interest in farming resulted in large amounts of imported food to Alaska (Caster, 2011).

Farming in Alaska is limited. Most farms are situated in the Matanuska-Susitna Valley, about 40 miles northeast of Anchorage, or on the Kenai Peninsula, about 60 miles from Anchorage. The primary crops grown in these areas include potatoes, carrots, lettuce, and cabbage (Allen, 2012). Another agricultural area is the Delta Junction, located about 100 miles southeast of Fairbanks, where the major crops are oats, barley, and hay (University of Alaska Fairbanks Cooperative Extension Service, 2024).

Recently, as is true in other states in the United States, there has been a movement toward consuming locally produced foods in Alaska (Martinez et al., 2010; Crampton, 2019). The state's extended daylight during summer enables some crops to grow fast and reach enormous sizes. Additionally, Alaska is experiencing faster warming than the global rate, which has extended the growing season and made growing local foods easier (Rosen, 2019). Due to these unique growing conditions, many Alaska consumers perceive locally grown fruits and vegetables to higher sugar content and taste better than those imported from other states (Crampton, 2019).

A large body of literature has estimated consumer WTP for local foods, consistently finding that consumers are willing to pay a premium for products produced within their state. These studies indicate that consumers' WTP varies based on the products, location, and other factors (Giraud, Bond, and Bond, 2005; Darby et al., 2008; Carpio and Isengildina-Massa, 2009). Previous studies show that consumers in various states are consistently willing to pay a premium for locally produced food products labeled with state-specific designations, such as Arizona Grown (Nganje, Hughner, and Lee, 2011), Utah's Own (Bosworth, Bailey, and Curtis, 2015), Kentucky Proud (Soley, Hu, and Vassalos, 2019), Certified South Carolina (Soley, Hu, and Vassalos, 2019), and Missouri Grown (Grashuis and Su, 2023).

Compared to previous studies on consumer preferences for local foods, we contribute to the literature by conducting a case study on the "Alaska Grown" label, which has received limited attention. The label was created by the agriculture industry in Alaska to highlight products grown in Alaska. To use the label, the food products need to be 100% locally grown, except in the case of processed foods, in which at least 75% of the food content must be grown in Alaska (State of Alaska Division of Agriculture, 2018). There is a noteworthy advantage of using Alaska to study preferences for local foods because of its unique geographical location. The literature indicates a lack of a clear definition of "local food" (Bazzani et al., 2017; Cappelli et al., 2022), which can refer to a geographic production area (Hand and Martinez, 2010), a county or region within certain political boundaries (Brown, 2003), or the 30–150 mile radius from a consumer's house (Trobe, 2001; He et al., 2021). "Local" can have a different meaning in each consumer's mind (Onken, Bernard, and Pesek, 2011). In some cases, the state boundaries may serve as a natural geographic extent of "locally grown" foods in consumers' minds (Darby et al., 2008; He et al., 2020). However, for some consumers, a state-based growing region may not be consistent with their perceptions of local. For instance, a survey by Hu et al. (2013) of Kentucky and Ohio consumers found that about 73% define local as less than 100 miles. Therefore, there are likely intrastate differences in how the "Alaska Grown" label is perceived. Given that farming in Alaska is limited and about 95% of its food is imported, Alaska consumers have a relatively clearer distinction between local and nonlocal food, leading to less confusion about how "local food" is defined.

In addition to the locally grown label, production method claims such as organic, hydroponics, and aquaponics are popular considerations for fresh produce (Carlson et al., 2023; US Department of Agriculture, 2023). When making purchase decisions, consumers value these distinctive attributes and often face trade-offs between them. Many studies have examined consumers' preferences for local and organic claims and compared their WTP for these two claims. Most of the literature found that consumers are willing to pay a higher premium for local claims than for organic ones (Loureiro and Hine, 2002; Bond, Thilmany, and Bond, 2008; Hu, Woods, and Bastin, 2009; Costanigro et al., 2011; Onken, Bernard, and Pesek, 2011; Aprile, Caputo, and Nayga Jr, 2012; de Magistris and Gracia, 2014; Lim and Hu, 2016; He et al., 2020). However, in some cases, consumers' WTP for local and organic claims are comparable (Yue and Tong, 2009; Costanigro et al., 2014), or their WTP for organic claims is higher than for local claims (Bazzani et al., 2017; Chen, Gao, and McFadden, 2020). A few studies have indicated that consumers' preferences for local and organic claims depend on the product (Scarpa, Philippidis, and Spalatro, 2005), production origin, and organic certification levels (Hu et al., 2012).

The interaction between organic claims and the locally grown label can impact consumers' valuation of local foods. Several studies have investigated this interaction, producing mixed results. Onozaka and McFadden (2011) found that locally grown claims have the highest value, but they found no interactive effect between local and organic claims. Gracia, Barreiro-Hurlé, and Galán (2014) analyzed Spanish consumers' preferences for the origin and production methods of eggs and found that local and organic claims are complements for members of the "origin lover" segment, who value the local claim more but are substitutes for the "production method lover" segment, whose members value the organic claim more. Costanigro et al. (2014) found that consumers value local and organic labels as partial substitutes. Hempel and Hamm (2016) studied German consumers' WTP for local and organic apples, butter, flour, and steaks and found that local food production complements organic food production among the organic-minded consumers. Hence, to fully understand consumers' preferences for local foods, it is crucial to consider the potential interactive effects of other popular attributes, such as organic and hydroponic claims.

Hydroponic production has emerged as a popular crop production method in recent years, enabling producers to produce more fresh foods year round than traditional farming. The interaction between hydroponic claims and locally grown labels can influence consumers' views of locally grown foods. Fu (2021) conducted an auction experiment to examine the effect of "locally grown" information on consumers' WTP for local and nonlocal strawberries. Despite local hydroponic strawberries receiving the lowest score in a blind tasting, information disclosure that the products were locally grown led consumers to perceive these strawberries as higher quality than nonlocal ones. Consequently, with this information, consumers were willing to pay a $0.62 premium for local hydroponic strawberries after tasting the berries. The use of hydroponic production becomes more controversial when producing organic products. Although the USDA allows some hydroponic growers to use USDA organic labels, there is a debate among the industries about whether hydroponically grown produce can be certified as organic (Flynn, 2019). Gilmour et al. (2019) conducted a nonhypothetical choice experiment to estimate consumers' WTP for hydroponic lettuce with the organic attribute and found that consumers were not willing to pay premiums for hydroponics; the presence of organic certification did not affect their WTP. Our research incorporates the hydroponic attribute in the choice experiment design, which helps better understand the interactive effects between hydroponic, local, and organic labels. Our findings will provide insights from a consumer perspective about the potential market of hydroponic produce and how consumers value the hydroponic claim in the context of other popular labels such as locally grown and organic.

Various food labels aim to signal special attributes to consumers to create impressions of premium product quality, which can lead to price premiums. However, food labels are typically simple and concise, often lacking detailed information that helps consumers understand the benefits of the attributes. Providing information regarding the benefits related to the label can influence consumers' preferences and WTP, serving as a marketing tool to educate and nudge consumers (Li et al., 2022; Tian et al., 2022b). Tian et al. (2022a) examined how information about the health, environmental, and economic benefits of locally produced aquaculture products affect Connecticut consumers' WTP for products produced in the state and found that information about local economic benefits increases consumers' WTP for locally grown or raised products more than other types of information. McFadden and Huffman (2017) used an experimental auction to test the effect of information treatment on consumers' WTP for organic, "natural," and conventional foods. They found that information about the industry or independent perspectives on organic food decreases consumers' WTP for organic food, while information about the industry or independent perspectives on "natural" foods increases consumers' WTP for natural foods. They also found cross-market effects, particularly that consumers increase their WTP for organic products after receiving information about the "natural" food industry's perspective on its products. In this article, we test the effect of information about the benefits of eating local foods on consumers' WTP for locally grown and other labels, aiming to provide insights into potential marketing strategies to promote local foods.

While information impacts consumer decisions, their choices are also influenced by underlying social preferences, which suggests that decision making is not only driven by self-interest but also by considerations of others' welfare. These motivations have been referred to as social preferences, social motives, other-regarding preferences, welfare trade-off ratios, and social value orientation (Murphy, Ackermann, and Handgraaf, 2011). Theoretical economic research has shown the economic consequences of social preferences, such as fairness (Rabin, 1993), reciprocity (Charness and Rabin, 2002; Dufwenberg and Kirchsteiger, 2004), inequality-averse (Fehr and Schmidt, 1999), and altruism (Andreoni and Miller, 2002). Results from these studies indicate that individuals' WTP premiums for food can be influenced by altruistic goals. However, to our knowledge, no studies have yet explored the role of consumers' social preferences in their WTP for locally grown foods.

Experiment Design and Data

Choice Experiment Design

We designed a choice experiment to elicit consumer preferences for lettuce. This method is a well-established approach for eliciting preferences and WTP (Louviere, Hensher, and Swait, 2000; Train, 2009). In a choice experiment, respondents are presented with a series of choice sets, each containing several alternative products differentiated by various attribute levels. Compared to other methods to estimate consumer preferences, choice experiments are consistent with random utility theory and allow consumers to make trade-offs across these attributes and levels to reach decisions. This approach closely mimics a real shopping and decision-making scenario, enabling us to assess the relative importance of different attributes and estimate consumers' WTP.

In our choice experiment, each participant received a series of choice tasks and was asked to choose between two hypothetical products (options A and B)—each representing a head of green leaf lettuce—and a no-purchase option in each choice task. The choice experiment included four attributes: "Alaska Grown" label, USDA organic certification, hydroponically grown practice, and price. Each of the first three attributes had two levels, indicating the presence or absence of the respective claim labels. The price attribute had four levels: \$2, \$3, \$4, or \$5, which were determined based on investigations of the price range for lettuce at local grocery stores and farmers' markets. We used an optimal orthogonal in the differences design (D-optimality at 97.21%) that allowed two-way interactions among the locally grown, organic, and hydroponic attributes to generate 16 choice sets. These were split into two blocks, so each respondent completed eight choice tasks.

Before participating in the choice experiment, participants were provided with definitions of the attributes. Specifically, we described that the "Alaska Grown" logo indicates that the produce is grown and harvested in Alaska, a designation created by the state's agriculture industry to highlight locally grown products. The "USDA Organic" certification label indicates that the food has been produced through approved methods that integrate cultural, biological, and mechanical practices that foster the cycling of resources, promote ecological balance, and conserve biodiversity. Synthetic fertilizers, sewage sludge, irradiation, and genetic engineering may not be used in the process. The hydroponic method involves growing plants without soil but use a nutrient-rich solution to deliver water and minerals to their roots. The root system is supported using an inert medium, such as perlite, rockwool, clay pellets, peat moss, or vermiculite. See Appendix A for the choice experiment description and a sample choice question.

Given the diverse range of product profiles created by the three claim labels, it was not possible to get all matching products for a real choice experiment. Therefore, we conducted a hypothetical choice experiment instead. To mitigate possible hypothetical bias (Cummings and Taylor, 1999), we asked consumers to read a cheap talk script explaining the hypothetical bias problem, reminding consumers of their family budget constraints, and asking them to respond to the choice tasks exactly as they would if they were on a real shopping trip and had to pay for the choice (see Appendix B for the cheap talk script).

Information Treatment

We designed an information treatment to inform respondents about the benefits of consuming local foods. The information was sourced from the Alaska Grown website and the Facebook page of the Alaska Department of Natural Resources Division of Agriculture. The message states:

> From June through October, Alaskans are encouraged to spend $5 each week on Alaska Grown products at their local grocery stores. If every Alaskan participates in the challenge, we will put tens of millions of dollars back into our local economy. Spending on Alaska Grown helps support our farmers, grows our local economy AND you get a fresher, healthier product!

This message was a component of the $5 Alaska Grown Challenge, a statewide campaign launched in 2018 by the Alaska Division of Agriculture to support the growth of the state's agriculture industry and strengthen the local economy (Alaska Farm Bureau, 2018; Buy Alaska Grown, 2018). Respondents were randomly assigned to receive the information treatment, which was provided before they participated in the choice experiment tasks.

Survey and Data

We conducted the survey over three weekends at two farmers' markets and three hypermarket superstores in Anchorage, Alaska. Students from the University of Alaska Anchorage were recruited to help administer the survey and collect data. They set up booths at the farmers' markets and the entrances of the hypermarkets to invite shoppers to participate. At the farmers' markets, due to the lack of specific traffic patterns, students approached shoppers randomly as they passed the booth. At the hypermarkets, students randomly invited shoppers as they exited the stores. Before beginning the choice experiment and survey, participants were provided with consent forms, and we obtained verbal consent. Copies of the consent form were made available to them. On average, participants took about 10 minutes to complete the survey. Upon completion, we gave each participant a reusable

Table 1. Summary Statistics of Demographics and Social Preference Variables

Variable	Description	All Sample (N = 363) Mean	Std. Dev.	No-Information (N = 180) Mean	Std. Dev.	Information (N = 183) Mean	Std. Dev.	T-Test p-value
female	= 1 if female; 0 otherwise	0.72	0.45	0.74	0.44	0.71	0.45	0.5445
age	age in years	47.27	16.26	46.71	16.92	47.82	15.63	0.5215
AKyrs	years have been living in Alaska	28.19	17.42	28.45	18.77	27.94	16.05	0.7823
edu_lhhs	= 1 if having up to high school education; 0 otherwise	0.1	0.3	0.09	0.29	0.11	0.32	0.4164
edu_col	= 1 if having some college; 0 otherwise	0.34	0.47	0.35	0.48	0.32	0.47	0.5792
edu_ba	= 1 if having bachelor's degree; 0 otherwise	0.29	0.46	0.31	0.46	0.28	0.45	0.4996
edu_grad	= 1 if having postgraduate degree; 0 otherwise	0.27	0.44	0.25	0.43	0.28	0.45	0.4634
hh_num	Household size	2.63	1.63	2.61	1.62	2.66	1.64	0.777
d_child	= 1 if children present in household; 0 otherwise	0.32	0.47	0.33	0.47	0.31	0.46	0.6569
inc_num	annual household income in 2017, in $thousands	94.52	58.25	95.83	57.54	93.26	59.07	0.6802
mkt	= 1 if data collected at farmers' market; 0 otherwise	0.39	0.49	0.39	0.49	0.39	0.49	0.9294
Altr	= 1 if altruist; 0 otherwise	0.02	0.13	0.03	0.16	0.01	0.07	0.0982
Pros	= 1 if prosocial; 0 otherwise	0.73	0.44	0.72	0.45	0.75	0.43	0.4928
Indi	= 1 if individualist; 0 otherwise	0.23	0.42	0.23	0.42	0.23	0.42	0.9314
Comp	= 1 if competitive; 0 otherwise	0.02	0.14	0.02	0.15	0.02	0.13	0.6878

grocery bag as a token of our appreciation, as previously informed. In total, we interviewed 413 consumers. After removing observations with missing values or invalid entries, 363 observations remained in the dataset, with 180 in the no-information treatment and 183 in the information treatment. In the survey, we also collected information on consumers' perceptions of locally grown, organic, and hydroponic foods as well as their social preferences and sociodemographic information.

Table 1 shows summary statistics of demographics and social preference variables for the entire sample, the no-information treatment, and the information treatment. The last column reports the p-values from t-tests assessing the equality of means between the two treatment groups. In the entire sample, about 72% of the participants were female. They were 47.27 years old on average, ranging from 18 to 85. On average, the participants had lived in Alaska for 28.19 years. About 10% of the participants had up to high school education, 34% had some college, 29% had a bachelor's degree, and 27% had a postgraduate degree. The average household size was 2.63 people. About 32% of the households had children at home. The average annual household income in 2017 was $94,520. About 39% of the data was collected at farmers' markets.

The demographics of our sample align closely with the census data regarding household size and income. However, the proportion of female participants was higher than in the general population.

This aligns with previous research that collected data using face-to-face interviews in grocery store settings. The proportion of females ranges between 50% (Kassas et al., 2023) and 76% (Shi, House, and Gao, 2013), with intermediate values of 67% (Hu, Woods, and Bastin, 2009) and 70% (Costanigro et al., 2011). This may reflect the fact that women handle most household grocery shopping (Shi, House, and Gao, 2013). The education level of our sample was higher than that of the general population, probably because participants were aware that the survey was conducted by a university research team, making those with higher education backgrounds more inclined to participate and support the project.

Following the methodology of Murphy, Ackermann, and Handgraaf (2011), we incorporated the social value orientation (SVO) slider measure into the survey to assess participants' social preferences. Specifically, we included six primary SVO slider items as choice questions. (See Appendix C for the list of questions.) Participants were instructed to imagine that they had been randomly paired with another person, who was referred to as the "other person." This other person is someone they did not know and would remain mutually anonymous. All their choices would be completely confidential. Participants then made a series of decisions about allocating resources between themselves and this other person. Using the measures and criteria from Murphy, Ackermann, and Handgraaf (2011), we calculated the SVO index for each participant and classified them into four social preference categories: altruistic (aiming to maximize other person's payoff), prosocial (aiming to maximize joint payoff), individualistic (aiming to maximize own payoff), and competitive (aiming to maximize the difference between own and the other person's payoff). As shown in Table 1, about 2% of the participants were altruistic, 73% were prosocial, 23% were individualistic, and 2% were competitive. The last column of Table 1 reports the p-values of t-tests with the null hypothesis of equal sample means. All p-values are greater than 0.05, indicating that we failed to reject the null hypothesis for all variables in the table, which confirms the random assignment of the information treatment.

Model

We assume that each respondent defines utility in terms of attributes as a linear function form under the random utility model framework. The utility function is

$$U_{nsj} = V_{nsj} + \varepsilon_{nsj}, \tag{1}$$

where U_{nsj} represents the utility of alternative j perceived by respondent n in choice situation s; V_{nsj} is a systematic component contributed by attributes, and ε_{nsj} is a random component unobserved by researchers.

A consumer chooses the alternative that provides the largest utility. The consumer will choose alternative j at choice situation s if and only if $U_{nsj} > U_{nsi}$, $i \neq j$. The probability that respondent n chooses alternative j at choice situation s is

$$\begin{aligned} P_{nsj} &= Prob\left(V_{nsj} + \varepsilon_{nsj} > V_{nsi} + \varepsilon_{nsi}, \forall i \neq j\right), \\ &= Prob\left(\varepsilon_{nsi} < \varepsilon_{nsj} + V_{nsj} - V_{nsi}, \forall i \neq j\right). \end{aligned} \tag{2}$$

Assuming a Type I extreme value distribution for the error term, the probability is derived as

$$P_{nsj} = \frac{\exp\left(V_{nsj}\right)}{\sum_{i=1}^{J} \exp\left(V_{nsi}\right)}. \tag{3}$$

We assume that preferences vary among respondents and use a random parameter logit (RPL) model to estimate consumers' heterogeneous WTP for each specific product attribute. Unlike the multinomial logit model, which assumes homogeneous preferences among consumers, the RPL model specifies an individual-specific parameter vector. This enables the coefficients on attribute variables to vary across individuals, thus accounting for consumers' heterogeneous preferences. We specify the model in preference space by defining the distribution of coefficients in the utility function and then deriving the distribution of WTP. This approach generally could provide a better fit to the data compared to models in WTP space (Train and Weeks, 2005). The systematic component of utility, V_{nsj}, can be written as

$$(4) \quad \begin{aligned} V_{nsj} = {} & \beta_{1n} \times local_{nsj} + \beta_{2n} \times organic_{nsj} + \beta_{3n} \times hydro_{nsj} + \beta_{4n} \times lo\_or_{nsj} \\ & + \beta_{5n} \times lo\_hy_{nsj} + \beta_{6n} \times or\_hy_{nsj} + \beta_p \times price_{nsj} + \beta_o \times optout_{nsj}, \end{aligned}$$

where *local* takes a value of 1 if the lettuce has Alaska Grown label and 0 otherwise; *organic* equals 1 if the lettuce has USDA Organic certification label and 0 otherwise; *hydro* equals 1 if the lettuce is grown using hydroponic methods and 0 otherwise; *price* assumes values of \$2, \$3, \$4, and \$5 for each head of lettuce; and *optout* is 1 if consumers chose the "Neither A or B" option and 0 otherwise. *lo_or* represents the interaction item between *local* and *organic*; *lo_hy* represents the interaction between *local* and *hydro*; and *or_hy* represents the interaction between *organic* and *hydro*. We assume random parameters for all attributes following a joint normal distribution with no correlation, except for price, which is assumed to be nonrandom; therefore, the WTP for the nonprice attributes is normally distributed (Layton and Brown, 2000; Lusk and Schroeder, 2004). For the observations corresponding to the opt-out option, we code all the attribute values to be 0. The *optout* coefficient indicates the utility (disutility) of not purchasing lettuce on that shopping trip. We used Nlogit 6 to estimate the RPL model. The maximum simulated likelihood method with 1,000 Halton draws was used to estimate the model in equation (4).

Given the utilitarian interpretation of our econometric specification, the parameters defining preferences over the attributes can be interpreted as marginal utilities. The consumer's WTP for each of the corresponding attributes can be estimated as

$$(5) \quad WTP_{nk} = -\frac{\beta_{nk}}{\beta_p}, k = 1, 2, 3.$$

We estimate the coefficients and WTP values for the attribute factors in the RPL model in equation (4) for the no-information and information treatments. Based on the conditional (i.e., posterior) mean WTP premiums calculated for each consumer in the RPL model, we draw a bootstrapping sample (Krinsky and Robb, 1986) to calculate the mean and confidence interval of WTP for each attribute in the no-information and information treatments. We also calculate the marginal WTP values for the locally grown attribute with the organic and hydroponic attributes present or absent. A two-sample *t*-test is used to test the null hypothesis that the marginal WTPs between the two treatments are equal.

We employ a seemingly unrelated regression model to explore how consumers' social preferences influence their WTP for local, organic, and hydroponic attributes. We assume that the equations representing consumers' WTP for these three attributes are interrelated and use a system of regression models to account for the correlation of error terms across these equations. This method allows us to assess how consumers' social preferences, perceptions, and demographic factors affect their WTP for these attributes (Gao et al., 2019; Zheng, Wang, and Shogren, 2021; Chuah et al., 2024).

Results and Discussions

Consumers' Perceptions of Local, Organic, and Hydroponic Foods

In the survey, we included a set of questions asking respondents about their perceptions of the benefits of eating local, organic, or hydroponic food. Specifically, we asked respondents if they

Table 2. Summary Statistics of Consumers' Perceptions of the Benefits of Local, Organic, and Hydroponic Foods

Variable		Percentage (%)	Std. Dev.
Eating local food benefits your health	Agree	73.0	0.44
	Disagree	6.9	0.25
	Neutral	20.1	0.40
Eating local food benefits the environment	Agree	79.9	0.40
	Disagree	6.6	0.25
	Neutral	13.5	0.34
Eating local food benefits the local economy	Agree	91.2	0.28
	Disagree	6.3	0.24
	Neutral	2.2	0.15
Eating organic food benefits your health	Agree	66.4	0.47
	Disagree	7.4	0.26
	Neutral	26.2	0.44
Eating organic food benefits the environment	Agree	71.1	0.45
	Disagree	6.1	0.24
	Neutral	22.9	0.42
Eating organic food benefits the local economy	Agree	46.3	0.50
	Disagree	12.4	0.33
	Neutral	39.1	0.49
Eating hydroponic food benefits your health	Agree	24.8	0.43
	Disagree	6.3	0.24
	Neutral	68.6	0.46
Eating hydroponic food benefits the environment	Agree	39.9	0.49
	Disagree	4.4	0.21
	Neutral	54.8	0.50
Eating hydroponic food benefits the local economy	Agree	28.7	0.45
	Disagree	5.8	0.23
	Neutral	64.5	0.48

agree that eating local (or organic or hydroponic) food benefits their health, is better for the environment, or supports the local economy. Table 2 presents summary statistics of consumers' perceptions of the benefits of local, organic, and hydroponic foods. About 73% of consumers agreed that consuming local foods benefits health, 6.9% disagreed, and 20.1% were neutral. About 79.9% agreed that consuming local foods benefits the environment, 6.6% disagreed, and 13.5% were neutral. Additionally, 91.2% agreed that consuming local foods benefits the local economy, 6.3% disagreed, and 2.2% were neutral. These statistics show that the majority of consumers recognize the benefits of consuming local foods, particularly for the local economy. Most consumers also perceived eating organic foods to have health and environmental benefits. However, few consumers recognized the health, environmental, or local economic benefits of hydroponic foods. Instead, most were neutral about these benefits, indicating that they were not familiar with foods produced using hydroponic growing methods.

Table 3. Estimated Coefficients in the Random Parameter Logit Model

	No-Information		Information	
Variable	**Coefficient**	**Std. Error**	**Coefficient**	**Std. Error**
local	1.34***	0.33	2.56***	0.32
organic	1.22***	0.35	1.32***	0.31
hydro	0.52	0.39	0.71**	0.36
lo_or	1.17**	0.52	0.28	0.48
lo_hy	0.39	0.50	−0.91**	0.44
or_hy	−1.01**	0.46	−0.63	0.43
price	−0.70***	0.07	−0.77	0.06
optout	−2.62***	0.29	−2.38***	0.28
Std. dev. of coefficient				
local	1.81***	0.23	1.54***	0.18
organic	1.64***	0.21	1.31***	0.17
hydro	1.26***	0.19	0.69***	0.18
lo_or	1.77***	0.52	0.91	0.58
lo_hy	1.68***	0.46	0.10	0.61
or_hy	0.19	0.44	0.03	0.37
Log likelihood	−981.01		−935.87	
No. of obs.	1,440		1,464	

Notes: Single, double, and triple asterisks (*, **, ***) indicate significance at the 10%, 5%, and 1% level.

Consumers' WTP and Information Effect

Table 3 presents the estimated coefficients in the RPL model. The coefficients of main items in both treatments are significant at the 1% or 5% levels, except for the coefficient on hydroponic attribute in the no-information treatment. Consumers' utility increases when buying local or organic lettuce, with the coefficient of the local attribute being higher than that of the organic attribute. This suggests that consumers place a greater value on the local-grown label over the organic claim, aligning with much of the literature referenced earlier (Loureiro and Hine, 2002; Bond, Thilmany, and Bond, 2008; Hu, Woods, and Bastin, 2009; Costanigro et al., 2011; Onken, Bernard, and Pesek, 2011; Aprile, Caputo, and Nayga Jr, 2012; de Magistris and Gracia, 2014; Lim and Hu, 2016; He et al., 2020). Without any information, consumer interest in local or nonlocal hydroponic lettuce remains low. This is supported by the statistics shown in Table 2, indicating that most consumers were not sure about the benefits of hydroponic foods. This finding is consistent with Gilmour et al. (2019), who showed that consumers were generally not willing to pay for hydroponic lettuce.

The coefficients of interaction items differ across treatments. In the no-information treatment, the coefficient of the interaction between local and organic claims is positive and significant at the 5% level. This indicates that, in the absence of additional information, consumers' utility for local and organic lettuce exceeds the sum of utilities of lettuce that is either local or organic separately. Thus, local and organic claims are complementary attributes. This finding aligns with Gracia, Barreiro-Hurlé, and Galán (2014) and Hempel and Hamm (2016), who found that local and organic claims are complements for certain consumer segments. Although Alaska has only a small number of organic farms, these results show demand for locally produced organic produce. Conversely, the coefficient on the interaction between organic and hydroponic claims is negative and significant at the 5% level, suggesting that consumers perceive the utility of organic and hydroponic lettuce as less than the sum of the utilities derived from these two attributes separately. Without additional information, consumers view organic and hydroponic attributes as substitutes, reflecting a lower valuation of organic products cultivated using hydroponic methods. In the information treatment, the coefficient

Table 4. Estimated Willingness to Pay in the Random Parameter Logit Model

	No-Information		Information	
Variable	**WTP**	**95% C.I.**	**WTP**	**95% C.I.**
local	1.90^{***}	(1.63, 2.16)	3.31^{***}	(3.10, 3.54)
organic	1.74^{***}	(1.53, 2.00)	1.71^{***}	(1.56, 1.90)
hydro	0.73	(0.57, 0.88)	0.92^{**}	(0.86, 0.98)
lo_or	1.65^{**}	(1.50, 1.84)	0.37	(0.32, 0.43)
lo_hy	0.56	(0.34, 0.68)	-1.17^{**}	(−1.17, −1.17)
or_hy	-1.43^{**}	(−1.44, −1.43)	−0.82	(−0.82, −0.82)

Notes: Single, double, and triple asterisks (*, **, ***) indicate significance at the 10%, 5%, and 1% level.

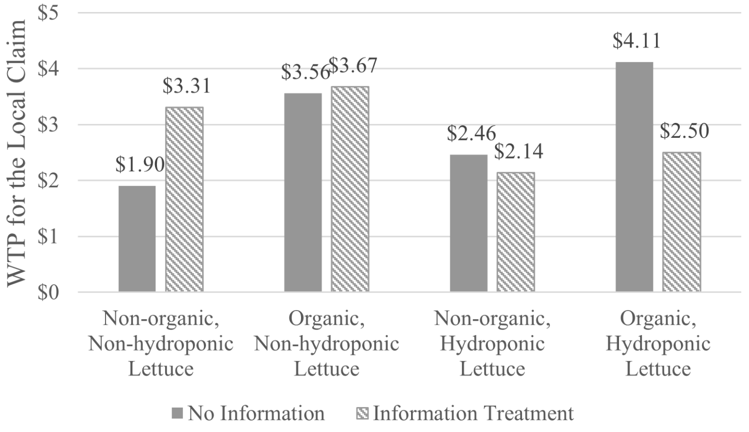

Figure 1. Consumers' WTP for the Locally Grown Claim

of the interaction between local and hydroponic claims is negative and significant at the 5% level. This indicates that when provided with information about the benefits of local food, consumers view local and hydroponic claims as substitutes.

For both treatments, the coefficient on *optout* is negative, showing a disutility associated with not purchasing a head of lettuce. Except for the interaction between organic and hydroponic claims in the no-information treatment and the interactions in the information treatment, the standard deviations of the coefficients are all significant at the 1% level. This indicates that consumer preferences for these attributes are heterogeneous.

Table 4 shows the WTP values calculated using the estimated coefficients as in equation (5). Utilizing the conditional (i.e., posterior) mean WTP premiums calculated for each consumer in the RPL model, we draw 100,000 bootstrapping resamples to determine the 95% confidence intervals for WTP associated with each attribute in both treatments. To examine the effect of information on consumers' WTP for locally grown foods in the presence of organic or hydroponic claims, we calculate the marginal WTP for the locally grown claim, considering the presence or absence of the other two attributes, and present the results in Figure 1. Given that the marginal WTP follows a normal distribution, we use a t-test to test the equality of marginal WTPs between the treatments (Gao and Schroeder, 2009; Agossadou and Nayga, 2023; Kovacs et al., 2024).

If neither organic nor hydroponic attributes are present, WTP for the locally grown claim is \$1.90 in the no-information treatment and \$3.31 in the information treatment. The p-value of the t-test for equality between these two WTPs is <0.0001, indicating a statistically significant difference in consumers' WTP for locally grown claims between the no-information and information treatments. Providing information about the benefits of eating local foods increases consumers' WTP for the locally grown claim by about 74%. This aligns with Tian et al. (2022a), who found that information about local economic benefits increases consumers' WTP for local aquaculture products.

When the organic attribute is present, the information effect is limited, increasing consumers' WTP for the locally grown claim by only about \$0.10 (\$3.56 in the no-information treatment vs. \$3.67 in the information treatment), a statistically insignificant amount (*p*-value of *t*-test = 0.5606). This is probably because the organic attribute dominates the locally grown attribute, reducing the impact of information about local food benefits on consumer preferences. When the hydroponic attribute is present, consumers' WTP for the locally grown claim decreases after receiving the information (\$2.46 in the no-information treatment vs. \$2.14 in the information treatment; *p*-value of *t*-test = 0.249). The presence of the hydroponic attribute discounts the value of information about local food benefits.

If both organic and hydroponic attributes are present, consumers' WTP for the locally grown claim is significantly lower when they receive the information (\$4.11 in the no-information treatment vs. \$2.50 in the information treatment; *p*-value of *t*-test <0.0001). This indicates that consumers are willing to pay premiums for lettuce grown locally using organic and hydroponic growing methods, signaling their support for local farmers to adopt these growing technologies. However, the presence of both attributes significantly discounts the value of information about local food benefits. Again, the organic and hydroponic attributes may dominate the locally grown attribute, reducing the impact of information promotion.

McFadden and Huffman (2017) showed that consumers increase their WTP for organic products after receiving information about "natural" foods, which they refer to as a cross-market effect. Our results also suggest a cross-market effect, which should be considered when designing and evaluating the effects of information. The presence of other product attributes may affect marketing strategies aimed at promoting local foods using information campaigns. Information about local food benefits can be used as a marketing tool to promote locally grown foods produced using traditional soil growing methods, but it may not be as effective in marketing foods grown locally using organic and/or hydroponic techniques.

Social Preferences' Impact on Consumers' WTP

We use a system of regression models to investigate the impact of social preferences on consumers' WTP. In the regression, the dependent variables are WTP for local, organic, and hydroponic lettuce, and the independent variables are social preferences, perceptions, and demographic information.

Table 5 presents the estimated coefficients of a system of regression models. The coefficient on the information treatment dummy variable in the WTP for local regression is 1.376 and significant at the 1% level, indicating that consumers are willing to pay about \$1.38 more for a head of locally grown lettuce when informed about the benefits of consuming local foods, holding all else constant. This result is similar to the information treatment effect on the WTP for locally grown lettuce shown in Table 4 (i.e., \$3.31-\$1.90), where the main and interaction items are estimated in the RPL model without control variables. The coefficient on the information treatment dummy variable in the WTP for hydroponic regression is 0.207 and significant at the 5% level, suggesting that with information about local food benefits, consumers are willing to pay about \$0.21 more for a head of lettuce produced using hydroponic growing methods. This aligns with the results about the difference in WTP for hydroponic claims between the treatment groups shown in Table 4 (i.e., \$0.92–\$0.73). The information provided is not directly related to the hydroponic growing methods, but it has a small effect on consumers' WTP for hydroponic foods. This indicates a cross-market effect, as evidenced by McFadden and Huffman (2017).

In terms of the impact of social preferences, prosocial consumers are willing to pay about \$0.31 more for a head of organic lettuce compared to individualistic consumers, which is significant at the 10% level. Prosocial consumers are willing to pay high premiums for organic foods, probably due to their concerns about themselves and others, as reflected in their social responsibility. This aligns with

Table 5. Estimated Coefficients of a System Regression Model of Willingness to Pay (WTP) for Local, Organic, and Hydroponic Lettuce

	WTP for Local		WTP for Organic		WTP for Hydroponic	
	Coefficient	**Std. Err.**	**Coefficient**	**Std. Err.**	**Coefficient**	**Std. Err.**
Intercept	2.247***	0.706	1.385***	0.409	1.052***	0.235
trt	1.376***	0.182	−0.008	0.144	0.207**	0.088
Altr	0.429	0.775	−0.954	0.612	0.401	0.374
Pros	0.115	0.218	0.306*	0.173	−0.004	0.105
Comp	0.622	0.710	0.436	0.570	−0.019	0.346
benefit health: agree[a]	0.706***	0.266	0.749***	0.202	0.235*	0.127
benefit health: disagree[a]	0.185	0.633	0.247	0.431	−0.015	0.271
benefit environment: agree[a]	−0.040	0.319	0.235	0.211	0.067	0.112
benefit environment: disagree[a]	−0.198	0.867	0.579	0.473	0.305	0.280
benefit local economy: agree[a]	−0.710	0.592	0.019	0.169	−0.084	0.123
benefit local economy: disagree[a]	−0.411	1.140	−0.189	0.266	−0.081	0.276
female	−0.257	0.208	0.122	0.166	−0.022	0.101
age	−0.005	0.007	−0.004	0.006	−0.002	0.004
AKyrs	0.004	0.006	−0.019***	0.005	−0.005	0.003
edu_col	0.020	0.330	0.35	0.264	−0.113	0.160
edu_ba	−0.543	0.346	0.362	0.277	0.035	0.167
edu_grad	−0.429	0.355	0.266	0.285	−0.082	0.172
hh_num	−0.026	0.074	−0.045	0.058	−0.018	0.036
d_child	−0.301	0.258	−0.185	0.204	−0.115	0.124
inc_num	0.005***	0.002	−0.001	0.001	0	0.001
mkt	0.225	0.197	0.107	0.156	−0.029	0.096

Notes: Single, double, and triple asterisks (*, **, ***) indicate significance at the 10%, 5%, and 1% level.
[a]The perception variables used in the three models are consumers' perceptions of local, organic, and hydroponic foods, respectively.

existing studies, which found that consumers with environmental concerns or socially responsible consumption behavior tend to have more favorable attitudes toward organic foods (Hughner et al., 2007; Aslihan Nasir and Karakaya, 2014). However, consumers' social preferences do not directly impact their preferences and WTP for local or hydroponic lettuce.

The perception of health benefits from consuming local, organic, or hydroponic foods leads to a higher WTP for these attributes. Specifically, consumers who believe in the health benefits of eating local foods are willing to pay about $0.71 more for a head of locally grown lettuce. Similarly, those who see health benefits in consuming organic foods are willing to pay about $0.75 more for organic lettuce. Consumers who perceive health benefits from eating hydroponic foods are willing to pay about $0.24 more for hydroponic lettuce. However, consumers' perceptions of the environmental and local economic benefits do not influence their WTP for these attributes. Hence, health benefits are the primary factor driving their higher WTP for foods labeled as local, organic, or hydroponic. This result aligns with previous research, which suggests that perceived private benefits (e.g., health, food safety) are more important than altruistic benefits (e.g., environment) in influencing consumer WTP for eco-labels (Chen et al., 2018).

Consumer characteristics also affect their WTP for local, organic, and hydroponic lettuce. Higher-income consumers are willing to pay more for locally grown lettuce. While the magnitude of this coefficient is small, it shows that consumers are concerned about the price premiums of locally grown produce, and income levels play a role in their purchasing decisions. Consumers who have lived in Alaska for a longer period are willing to pay less for organic lettuce. This may be explained by Alaska's natural environment and lifestyle. Due to Alaska's cool temperature and high soil quality (Alaska Farmers' Market Association, 2018; Orr, 2021), many people believe locally grown produce is of high quality and may not prioritize organic products or feel it is essential to buy them (Nguyen, 2014).

It is worth noting that the coefficients on the dummy variable indicating farmers' markets are insignificant in the willingness to pay for local, organic, and hydroponic regressions. This aligns with Printezis and Grebitus (2018), who found that consumers are unwilling to pay premiums for local food sold at farmers' markets and show equal support for local farmers who sell their produce at different venues.

Conclusions

Amid national consumer movements toward local foods, Alaska consumers have shown increased interest in purchasing local foods. In addition to the locally grown claims, consumers pay attention to claims related to production methods. State-level programs have launched marketing campaigns to educate consumers about the benefits of local foods, aiming to support local farmers and the economy. In this study, we use a choice experiment to elicit Alaska consumers' preferences and WTP for locally grown lettuce, with organic and hydroponic attributes present or absent. We also test an information treatment about the benefits of local foods to quantify its impact on consumers' WTP for locally grown produce. Our research contributes to the stream of literature about consumers' preferences for local foods and the influence of information on their WTP. To our knowledge, this is the first study estimating Alaska consumers' WTP for local foods. Alaska's unique location reduces confusion about the definition of "local," which provides an advantage in studying consumers' WTP for local foods.

Our results provide insights into potential production and marketing strategies for agricultural industry stakeholders to promote locally grown produce in Alaska. We found that consumers are willing to pay a $1.90 premium for a head of lettuce labeled as "Alaska Grown" (without any claims of being organic or hydroponically grown). When informed about the benefits of consuming local foods, consumers' WTP premium increases by 74% to about $3.31. This underscores opportunities for the farming sector to scale up local produce supply and set premium pricing while suggesting educational outreach's substantial impact. The efficacy of informational campaigns, such as the $5 Alaska Grown Challenge, in enhancing consumers' WTP, illustrates the power of informed decision making. For policy makers, emphasizing the dual advantages of bolstering the local economy and ensuring health benefits could be a promising strategy to advocate for local consumption.

Without additional information, the locally grown and organic claims are complements. However, information about the benefits of consuming local food seems to have a limited effect when applied to products labeled as both locally grown and organic/hydroponic. These findings suggest that promoting the benefits of local foods might be an effective marketing strategy for traditional soil-grown produce, but this approach may not resonate as effectively for those cultivated using organic or hydroponic growing techniques. Given the small number of organic/hydroponic farms in Alaska and the limited production, the diminishing impact of such information on consumers' WTP for organically or hydroponically grown local foods is not a significant concern.

Consumers' WTP for local, organic, or hydroponic labels is influenced by their social preferences, perceptions, and demographics. Consumers' social preferences affect their WTP for organic claims, with prosocial consumers being willing to pay more for organic lettuce. Perceptions of health benefits are the primary drivers for consumers to pay premiums for local, organic, or hydroponic foods. Additionally, higher-income consumers are willing to pay more for locally grown lettuce. These insights identify specific consumer groups that local producers and distributors can strategically target to boost sales of locally grown foods.

One limitation of our study is that our sample is not representative of the Anchorage population. The proportion of female participants and the education levels of participants in our sample are higher than the general population. This may be due to the data collection in farmers' markets or grocery store settings by a university team. This factor needs to be considered when generalizing the results for policy decision making. Another limitation is that, due to the constraints on the possible sample size through in-person surveys, we combined the benefits of eating local foods, including supporting local farmers, growing the economy, and getting fresher and healthier products, into one single information treatment. Lusk and Schroeder (2004) showed that the effect of information varies by type of information and location. Designing information treatments that deliver benefits from various perspectives could help investigate which benefit perspective is more effective in encouraging consumers to buy local food. In addition, despite the large amount of literature about consumers' WTP for local foods, the studies typically focus on a specific state's locally grown label and program using specific products. There has not been a nationwide study on WTP for locally grown foods and the heterogeneity in WTP across states. A large-scale study across states about preferences for various local products could help address the generalization issue of state-level WTP studies.

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Appendix A. Choice Experiment Description and a Sample Choice Question

You will be presented with a series of choice tasks and asked to choose between two heads of green leaf lettuce product options (option A or option B). You can also choose a third "neither A nor B" option (option C). Please check the box "☑" of your choice for each scenario.

You will receive information about the following four characteristics for each product. Please assume that other characteristics of the lettuce are similar across all options.

Attribute	**Levels**	**Description**
Alaska Grown	Yes, No	If present (i.e. "Yes"), the product carries the Alaska Grown logo
Organic	Yes, No	If present (i.e. "Yes"), the product carries the USDA Organic certification label
Hydroponic	Yes, No	If present (i.e. "Yes"), the product is described as being grown using hydroponic method
Price	\$2, \$3, \$4, \$5	Price expressed in \$ per head of green leaf lettuce

Definition of the attributes:

- Alaska Grown logo indicates that the produce is grown and harvested in Alaska. The logo was created by the agriculture industry in Alaska to highlight products grown in Alaska.[1]
- USDA Organic certification label indicates that the food has been produced through approved methods that integrate cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity. Synthetic fertilizers, sewage sludge, irradiation, and genetic engineering may not be used.[2]
- Hydroponic method is growing plants without soil, instead using a nutrient-rich solution to deliver water and minerals to their roots. The root system is supported using an inert medium such as perlite, rockwool, clay pellets, peat moss, or vermiculite.[3]

Which of the following green leaf lettuce would you buy?

	Option A	**Option B**	**Option C**
Alaska Grown	No	Yes	
Organic	No	Yes	Neither A
Hydroponic	Yes	No	nor B
Price	\$5	\$4	
I would buy:	☐	☐	☐

[1] Source: State of Alaska Division of Agriculture (2018).
[2] Source: US Department of Agriculture (2018).
[3] Source: Calderone (2017).

Appendix B. Cheap Talk Scripts

Studies have shown that people often respond to a survey in one way but act differently in real life. In studies where people are asked to indicate a product preference but do not have to pay for the product in question, they often state a higher willingness to pay than what they would actually be willing to pay during real shopping trips. One possible reason is that people do not really consider how large the impact of this extra cost would actually be on the available family budget. It is easy to be generous when you do not really have to pay for it. During a real shopping trip, people might think differently: since the money spent on this good cannot be spent on other things. We ask you to respond to each of the following choice tasks exactly as you would if you were during a real shopping trip and had to pay for your choice. Please keep this in mind when answering the survey questions.

Appendix C. Social Value Orientation Slider Measure

In the following six questions, imagine that you have been randomly paired with another person, whom we will refer to as the other. This other person is someone you do not know and will remain mutually anonymous. All of your choices would be completely confidential.

You will be making a series of decisions about allocating resources between you and this other person. For each of the following six questions, please indicate the distribution you prefer most by checking the box "☑" below the payoff allocations. In the example below, a person has chosen to distribute the payoff so that he/she receives 50 dollars, while the anonymous other person receives 40 dollars.

Example

You receive	20	25	30	35	40	45	**50**	55	60
Other receives	70	65	60	55	50	45	**40**	35	30
	☐	☐	☐	☐	☐	☐	☑	☐	☐

1	You receive	85	85	85	85	85	85	85	85	85
	Other receives	85	76	68	59	50	41	33	24	15
		☐	☐	☐	☐	☐	☐	☐	☐	☐

2	You receive	85	87	89	91	93	94	96	98	100
	Other receives	15	19	24	28	33	37	41	46	50
		☐	☐	☐	☐	☐	☐	☐	☐	☐

3	You receive	50	54	59	63	68	72	76	81	85
	Other receives	100	98	96	94	93	91	89	87	85
		☐	☐	☐	☐	☐	☐	☐	☐	☐

4	You receive	50	54	59	63	68	72	76	81	85
	Other receives	100	89	79	68	58	47	36	26	15
		☐	☐	☐	☐	☐	☐	☐	☐	☐

5	You receive	100	94	88	81	75	69	63	56	50
	Other receives	50	56	63	69	75	81	88	94	100
		☐	☐	☐	☐	☐	☐	☐	☐	☐

6	You receive	100	98	96	94	93	91	89	87	85
	Other receives	50	54	59	63	68	72	76	81	85
		☐	☐	☐	☐	☐	☐	☐	☐	☐