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Decomposing the Value of Food Labels on Chicken

Zachary Neuhofer

Jayson L. Lusk

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Abstract:

This study examines the effects of beliefs in influencing consumer choice for broiler chicken labels. We elicit the perception of health, taste, safety, and animal welfare associated with eight different labels including organic, antibiotic-free, and brands. By varying the presence of labels in a choice experiment, we are able to examine their effects on consumer decision making. We also are able to decompose the value of utility associated with each belief for each corresponding label. After the decomposition of the labels we attempt to externally validate the findings by comparing the individual utility estimates to the responses to a best-worst scaling exercise separate from the choice experiment The preliminary findings are that changes in perceived health have the largest positive effect on consumer choice, and impacts of perceived animal welfare vary with exposure to different information treatments. Preliminary results also show that the consumers' estimated utility for health, taste, safety, and animal welfare is not strongly correlated with their responses to a best-worst task on food values.

Introduction

The role of perceptions and beliefs on consumer decision-making has often taken a backseat to the measurement of consumers' preferences. Recently, however, many studies have begun to examine these effects in food choice, which is increasingly important given that consumers are exposed to a variety of food labels and information campaigns designed to impact their behavior (Costanigro, Deselnicu, & Kroll, 2015; Lusk, Schroeder, & Tonsor, 2014; Malone & Lusk, 2017, 2018). Lusk, Schroeder & Tonsor (2014), identify the need to further examine this issue, showing that subjective beliefs can alter the interpretation of results in choice experiments. Costanigro et al., (2015) showed that product labels, attributes, and beliefs affect expectations of product quality. For example, products labeled "organic" were believed to have significantly higher nutritional content. Guilabert and Wood (2012) similarly found that many consumers incorrectly inferred that a product with a USDA-organic certification label is healthier than foods without.

As in previous research, this paper considers the role of beliefs in influencing consumer choice. In particular, we elicit consumers' perceptions of the taste, health, safety, and animal welfare impacts associated with different labels that a food possesses. By varying the presence/absence of labels in a choice experiment related to chicken breast choice, we are able to explore the effect of beliefs on consumer behavior. Moreover, we are able to decompose the utility consumers derive from labels, such as organic, into the impacts resulting from beliefs about taste, health, safety, and animal welfare, vs. other factors that we cannot explain. Finally, in a departure from prior research, we seek to externally validate the findings from the choice experiment related to the estimated utilities for taste, healthy, safety, and animal welfare by

comparing individual-specific estimates of such preferences to the choices in a separate best-worst task.

Previous research has determined that perceptions of taste, health, and safety are important drivers of choice. Perceived tastiness had a more significant impact on demand and willingness to pay (WTP) for meat products than food safety and health (Malone and Lusk, 2017), and was a strong determinant of beer demand along with familiarity of brands (Malone and Lusk, 2018). Food safety perceptions can be primary determinants of choices especially with labels identifying genetic modification (Lusk & Rozan, 2008). Evidence is mixed on the effects of perceived animal welfare on food demand and consumer WTP (Clark, Stewart, Panzone, Kyriazakis, & Frewer, 2017). Ortega & Wolf, (2018) find that consumers may be willing to pay significant price premiums for higher perceived animal welfare, whereas, Lister, et al., (2017), finds that safety and freshness are more important than animal welfare when assessing food demand. Tonsor and Widmar (2011) find that media attention to animal welfare significantly decreased meat demand, but that price and expenditure effects had greater impact on meat demand.

Prior research has studied consumer preferences for chicken attributes, a topic which is increasingly importance since chicken is the most consumed meat among U.S. Consumers. Some research suggests that preferences for chicken may be as affected by perceptions and labels as actual sensory characteristics (Napolitano et al., 2013). Van Loo, et al. (2011) found that consumers were willing to pay a premium for organic labels on chicken breasts, especially for the USDA certified organic label. Napolitano et al. (2013) also identifies that slow-growing breeds of chickens are considered less tender and juicy than conventional breeds. Lusk, (2018) identifies that non-GMO and organic labels are the most important labels when a brand is not

present, but when a leading brand is present, the brand becomes the most important attribute determining consumer WTP, and other labels have similar impact. Unless information presenting a positive view of slow-growth chicken was present, consumers were not willing to pay much more for this attribute, on average (Lusk, 2018).

Materials and Methods

Consumer Sample

This paper makes use of the same choice experiment data in Lusk (2018), but augments the choice experiment data with data on beliefs and data from a best-worst task. In 2017 a national survey of US chicken consumers was delivered online to a panel maintained by Survey Sampling Inc. To screen for consumers the initial question was "Do you eat chicken (e.g., breasts, thighs, wings, nuggets, tenders)?". Three percent of respondents were removed from the analysis as they failed to answer "yes" to this question and were directed to the end of the survey.

In total, 2,049 responses were collected. After the survey was completed, the respondents answered demographic questions. The sample demographic characteristics reflected the US Census population in general. The few exceptions are that the sample collected is marginally younger than average, and has fewer respondents in the highest income category of $160,000/yr. or more. Though there is no census data on chicken consumers, the survey provides some insights into their demographics. Based on stated volume by weight of chicken consumption, chicken consumers are more likely to live in the South, have larger households, and have larger families.

Choice Experiment

The study used a choice experiment (CE) method to elicit consumer preferences, which is commonly used in meat and general food demand analysis (Lusk, Roosen, & Fox, 2003; Mennecke, Townsend, Hayes, & Lonergan, 2007). To estimate the effect of the label beliefs on between chicken breast options a choice experiment was created with options with varying labels and prices. After consultation with supermarkets, previous literature, and scanner data the following six labels and attributes were selected: organic, no antibiotics-ever, no hormones added, and non-GMO. A commonly used slow growth chicken label is not readily available so it was created for the survey. In addition to the attribute labels, consumers were randomly assigned to one of two treatments which either did or did not include brands as a separate attribute. This study only utilized the data associated with the choice experiment using brands. Prices of choices varied from $1.99 to $5.99 in $0.50 increments as per price data from the US Bureau of Labor Statistics.

A total of 12 choice questions were created using the software Ngene using a D-optimal design. An image of the choice experiment is found in Figure 1**.** To analyze the effect of information on choices, respondents were randomly assigned to intone of three different information treatments. The first (a control) did not provided with any additional information. Another treatment (pro-slow growth) was shown two excerpts from news articles from the New York Times (Strom, 2017), and the National Public Radio (Charles, 2016) which provided information favorable to slow-growth chickens. The last (anti-slow growth) showed a graphic of information from the National Chicken Council that was critical of slow-growth practices (National Chicken Council, 2017).

Other Questions

Respondents were presented with a best-worst type question related to "food values" (Lusk & Briggeman, 2009). In particular, respondents were asked, "How important are the following items to you when deciding whether to buy chicken?" Thirteen items were shown and respondents had to pick four items and click and drag them into a box labeled "most important" and pick for other items and click and drag them into a box labeled "least important." Each attribute was listed with a short definition for example one was "Taste, the flavor of food in your mouth"

After the choice experiment was completed, the participants were asked a series of questions pertaining to their beliefs about broiler production and the various label attributes Examples of questions were "How healthy or unhealthy do you consider chicken sold with each of the labels shown below?". Other questions were "How expensive or inexpensive would you expect a package of chicken to be with each of the labels shown below?", "How tasty or untasty do you consider chicken sold with each of the labels shown below?", "How safe or risky in terms of food safety, do you consider chicken sold with each of the labels shown below?", and "How high or low a level of chicken animal welfare is associated with each of the labels shown below?". Each of the questions were answered according to a 5-point Likert scale with one being the lowest and 5 as the highest. An image of the belief questions is seen in Figure 2.

Econometric Methods

Our primary objective in this study is to examine the effect consumer's beliefs about health, safety, taste, and animal welfare effect the trade-offs made in chicken purchasing decisions. We use a similar approach to Malone and Lusk (2018) which examined how valuable taste is compared to health or safety.

The utility participant *i* derives from chicken breast option *j* in treatment *t* is:

$$U_{ijt} = \beta_{tj} + \alpha_t \cdot Price + \sum_{k=1}^{7} \vartheta_t^k \cdot d_j^k + \tau_{1t} \cdot Health_{ij} + \tau_{2t} \cdot Taste_{ij} + \tau_{3t} \cdot Safety_{ij} + \tau_{4t} \cdot Welfare_{ij} + \varepsilon_{ijt}.$$

In this function, β_{tj} is an alternative-specific constant indicating the utility of chicken breast *j* in treatment *t* relative to the "no purchase" option; $Price_j$ is price of chicken breast *j*; α the marginal disutility of price; d_j^k represents dummy variables indicating whether option *j* has 1 of the 7 labels present (organic, no antibiotics, no added hormones, slow growth, non-GMO, and Brand A or brand B); ϑ_t^k represents the utility associated with each *k* attribute, this is also reported as the unobserved utility not related to the beliefs; $Health_{ij}$, $Taste_{ij}$, $Safety_{ij}$, and $Welfare_{ij}$ is the average value for individual *i*'s rating for the belief questions pertaining to attribute *j*, the equation below represents the method for calculating the average health belief of option k (the same format was used for each of the belief):

$$\overline{Health_{ij}} = \frac{\sum_{k=1}^{7} d_j^k \cdot Health_{ij}}{\sum_{k=1}^{7} d_j^k}$$

Where the indicator variable for each label is multiplied to the corresponding health belief associated with label *k* and then divided by the number of labels present; τ_{1-4t} represents the marginal utility from changes in health, taste, safety, and animal welfare. The unobserved portion of the utility function is denoted by ε_{ijs}, which if distributed iid extreme value results in the multinomial logit model, where the probability of choice is given by:

$$\text{Probability } (i \text{ chooses } j \text{ in treatment } t) = \frac{e^{V_{ijt}}}{\sum_{k=1}^{K} e^{V_{ikt}}}.$$

Where V_{ijt} is the systematic portion of the utility function which is determined by the chicken breast *j* selected in treatment *t*, by individual *i*.

To allow for additional heterogeneity beyond the differences in the health, taste, safety, animal welfare, and label attributes, a random parameter logit (RPL) model was used. The RPL model was estimated using simulated maximum likelihood with 1,000 Halton draws from univariate normal distributions for all coefficients except price, for which a one-sided triangular distribution was assumed to constrain the price effect to be less than zero.

Estimates enable the calculation of willingness-to-pay (WTP) of each label. The WTP for the presence of label *k* (vs. no label) is calculated as

$$WTP^{k}{}_{j} = \frac{\vartheta_t^k + \tau_1 \cdot \overline{Health}_{ijk} + \tau_2 \cdot \overline{Taste}_{ijk} + \tau_3 \cdot \overline{Safety}_{ijk} + \tau_4 \cdot \overline{Welfare}_{ijk}}{-\alpha_t}$$

In addition, we obtained so-called individual-specific estimates of each person's preferences by using the estimated parameter distribution as the prior and "updating" these with the individual's choices. We then explored the correlation between the individual-specific preferences for safety, taste, health, and animal welfare and the responses to the "food values" questions. To measure the correlations a vector for each "food values" question was created in which if the value was in the "best" category it was given a 1, "worst" (-1), and neither "0". The new vectors were correlated with the parameter matrix from the RPL for each of the labels and the average beliefs. We also tested whether mean preferences were significantly different for people who rated each food value as "best", "worst" or "neither." These latter calculations serve as a validity check: are people who tend to demonstrate high preferences for safety in the choice experiment also tend to indicate safety as one of the most important food values?

Results

The results of the initial MNL estimates show that in the control with no information, all of the individual labels are significant including the brands, the average belief of health, taste, and safety. Only animal welfare preferences are statistically insignificant. These results are compared to the MNL estimates computed without the beliefs where all the values are significant for the labels. The direction of the coefficients shows that the labels and the beliefs contribute positive utility to the consumers. The magnitude of utility is similar for organic, no-antibiotics ever, slow growth, and non-GMO. Health is the most valued belief, contributing the most utility, followed by taste, safety, and welfare. The only change in the RPL is that the brands are longer different from each other. All of the labels have a positive effect on utility. The slow growth label contributes the most unobserved utility followed by non-GMO, organic, and no-antibiotics-ever. The beliefs have a positive effect on utility as well, perceived healthiness increases the utility the most followed by taste and safety, animal welfare has the lowest effect and is insignificant. L In the pro slow growth treatment MNL, all of the labels are statistically significant and the brands are not significantly different from each other, the average health, taste, and animal welfare are significant, and safety is insignificant. The magnitude of the label effects marginally decrease with the input of the beliefs. All of the labels and beliefs have a positive effect on utility, but Brand B was marginally preferred to Brand A. The label contributing the most utility was slow-growth, followed by organic and non-GMO. The perceived health has the largest effect on utility, but is followed by animal welfare, taste, and food safety having a minimal impact. In the RPL the average food safety belief is significant and the difference in brands remains insignificant. All of the labels have a positive effect with the most utility attributed to slow growth, organic, and non-GMO. Health contributes the most utility

followed by animal welfare due to the positive information on slow growth chicken. Safety and taste contributed less utility but had positive marginal effects. In the anti-slow-growth treatment the initial MNL estimates show that all of the labels are significant and the brands are not significantly different from each other, the average health, safety and animal welfare beliefs are also significant and average taste is not. All of the labels have a positive effect on the consumers' utility with the largest effects attributed to organic and non-GMO, when the beliefs are implemented the effects slightly decrease from the labels as expected. Health has the largest positive effect in utility followed by animal welfare, safety, and taste. In this treatment the RPL shows a few more changes than the others, the brands are not significantly different from each other but the average taste becomes significant and the animal welfare perception is now insignificant. The labels that contribute the most utility is organic, non-GMO, and no-hormones. Perceived health contributes the most utility followed by taste, safety

The WTP estimates were derived from the RPL and the means of the belief variables. The WTP medians and decomposition are reported in tables 3, 4, and 5. The means used for the WTP calculations are found in tables 6,7, and 8. In the control group organic has the highest WTP. the lowest is slow growth), and the brands. In the pro-slow growth treatment, slow-growth is the highest WTP, and the lowest are Brand B and Brand A . The anti-slow growth treatment yielded the lowest WTP with organic having the highest value the lowest values are slow growth), Brand A , and Brand B .

The decomposition of the WTP values shows that in the control group, the health belief contributes to almost 50% of the WTP for each of the labels, this is followed by taste which accounts for approximately 25% of WTP. Food safety contributes a considerable amount as well, accounting for approximately 15-18%. Animal welfare contributes a miniscule amount without

any additional information. In the pro-slow growth treatment, health is the most important belief contributing the most to the consumers' WTP, but is followed by animal welfare due to the increase in awareness from the information treatment. Food safety has a marginally higher impact, but the most significant decrease is that in the presence of information, the taste perception supplies much less utility. In the anti-slow growth treatment, the negative information leads to a significant drop in the amount animal welfare contributes to WTP. The estimates are similar to the control. Health is once again the most important indicator accounting for close to 50% of WTP once again, this is followed by taste accounting for around 25%,

The correlations between the individuals' coefficients and the "food values" questions were small. The correlation coefficients are seen in tables 4, 5, and 6. The differences in the means are recorded in tables 10, 11, and 12. In the control group the correlation between slow-growth and the "taste values" choice was 0.2298. Aside from this correlation none of the other coefficients had values above 0.2, but a few of them had an absolute value between 0.1 and 0.2, which were organic and "natural"; NAB and novelty; NAB and size; no-hormone and convenience; no hormone and appearance; non-GMO and novelty; Brand A and origin; Brand A and animal welfare; average health and taste; average taste and natural; average taste and taste; average taste and convenience; average taste and origin; average safety and taste; average safety and origin. In the pro-slow growth none of the correlations had an absolute value above 0.2, but a few were between 0.1 and 0.2 which were no hormone and convenience; no hormone and origin; slow growth and convenience; slow growth and appearance; slow growth and environment; slow growth and animal welfare; non-GMO and natural; non-GMO and environment; non-GMO and size; Brand A and price; Brand A and appearance; average taste and price; average safety and natural; average safety and fairness; average safety and appearance; average safety and

environment; average safety and size.

Conclusions

This study reports similar results to previous studies on the effects of beliefs on meat demand. The signs of the coefficients of the RPL generally make economic sense, with the presence of the labels having a positive marginal effect on the WTP (Costanigro et al., 2015; Malone & Lusk, 2018; Van Loo et al., 2011). The organic label commanded the highest WTP except in the pro slow growth treatment where the slow growth label had a marginally higher WTP. This affirms previous research regarding the "halo" effect of the organic label that leads to a higher WTP for products which is due the higher perception of health and foods safety at the means despite slow growth yielding a higher utility coefficient. food quality (Costanigro et al., 2015; Guilabert & Wood, 2012). Contrary to Malone and Lusk (2018), this study finds that health is the most important belief with the largest impact on WTP when compared to taste and food safety (they did not look at animal welfare). This may be attributed to the general perception of chicken as a healthier meat with lower levels of animal fats. A particularly interesting finding was the results for the animal welfare belief and slow growth label. This study confirms the results of Ortega & Wolf, (2018) where claims of higher perceived animal welfare increased the WTP for a food product, as is seen in the pro slow growth treatment where the slow growth label had the highest WTP when the participants were given information about its potential improvements in the welfare of the chickens. The study also confirms Lister et al., (2017) that other attributes of chicken are better determinants of WTP than animal welfare. This study confirms this in treatments 2 and 6 where the average animal welfare belief is not statistically significant in the RPLM and has a minimal impact on the WTP. These results cause consideration for the importance animal welfare is to consumers. In these results it seems that

unless the consumer is told directly about the potential animal welfare benefits of a specific label or products. In this study perceptions of health and taste had higher value as compared to food safety in Lister et al. (2017), though food safety had higher valuation than animal welfare in all of the treatments except in the pro slow growth treatment. This study contradicts Tonsor and Widmar (2011) in that popular media information on animal welfare of a production process increased the WTP for it as the information from the NYT (Strom, 2017) and NPR (Charles, 2016) increased the WTP for the slow growth label.

It is quite surprising that the correlations between the "food values" questions and the RPLM coefficients were quite low. The initial hypothesis was that there would be significant correlation between these questions and the coefficients especially the relationship between the average beliefs and the related values question. This however, was the case with the correlations as the values were quite low even for highly related topics. One would expect that if a particular consumer has a an especially high perception of taste or health of a product that these beliefs would be highly correlated as an important attribute when making chicken selections. It is possible that the ordering or the wording of the specific questions led to these discrepancies.

In conclusion this study has several limitations, one is the possibility of endogeneity between the belief variables and our other exogenous label variables. Currently, we do not have an instrument to account for this. This study shows that beliefs are significant in chicken selection and that they contribute to WTP, more research is needed on the effects of consumer beliefs on choices in light of multiple sources of information.

Table 1: MNL Estimates

Variable	Control		Pro-Slow Growth		Anti-Slow Growth	
None	-3.100*** (0.094)	0.620** (0.280)	-3.267*** (0.099)	-0.114 (0.286)	-3.197*** (0.096)	-1.206*** (0.285)
Price	-0.646*** (0.022)	-0.684*** (0.023)	-0.685*** (0.023)	-0.698*** (0.024)	-0.651*** (0.022)	-0.658*** (0.022)
Organic	0.350*** (0.039)	0.306*** (0.040)	0.353*** (0.042)	0.338*** (0.042)	0.338*** (0.040)	0.307*** (0.041)
No antibiotics-ever	0.334*** (0.036)	0.321*** (0.038)	0.248*** (0.038)	0.225*** (0.039)	0.283*** (0.037)	0.265*** (0.037)
No Hormones	0.148*** (0.036)	0.119*** (0.038)	0.132*** (0.039)	0.111*** (0.039)	0.230*** (0.037)	0.207*** (0.038)
Slow-Growth	0.242*** (0.037)	0.319*** (0.038)	0.437*** (0.039)	0.430*** (0.040)	0.171*** (0.037)	0.207*** (0.038)
Non-GMO	0.336*** (0.038)	0.311*** (0.039)	0.339*** (0.040)	0.333*** (0.040)	0.311*** (0.039)	0.287*** (0.039)
Brand A	0.100*** (0.036)	0.078** (0.037)	-0.041 (0.038)	-0.034 (0.039)	0.008 (0.037)	0.002 (0.037)
Health	N/A	0.612*** (0.059)	N/A	0.390*** (0.062)	N/A	0.303*** (0.055)
Taste	N/A	0.268*** (0.061)	N/A	0.220*** (0.065)	N/A	0.000 (0.058)
Safety	N/A	0.173*** (0.064)	N/A	0.039 (0.067)	N/A	0.121** (0.061)
Animal Welfare	N/A	0.001 (0.058)	N/A	0.241*** (0.058)	N/A	0.137** (0.057)

*The columns are designated by treatment and the rows are designated by each variable. The coefficient value is displayed first, followed by the standard error. The left columns are the estimates without the beliefs, and the estimates to the right contain the beliefs.

Table 2 RPL Estimates

Variable	Control	Pro slow growth	Anti-slow growth
None	-1.718*** (0.652) 0.275	-1.686* (0.887) 2.004***	--2.734*** (0.749) 3.345***
Price	-1.473*** (0.072) 1.473***	-1.621*** (0.079) 1.621***	-1.389*** (0.066) 1.389***
Organic	0.441*** (0.058) 0.449***	0.576*** (0.063) 0.372***	0.464*** (0.055) 0.331***
No-antibiotics-ever	0.446*** (0.054) 0.345***	0.307*** (0.055) 0.302***	0.359*** (0.052) 0.287***
No Hormones	0.310*** (0.053) 0.241	0.299*** (0.060) 0.387***	0.376*** (0.056) 0.451***
Slow-Growth	0.520*** (0.053) 0.205	0.733*** (0.072) 0.694***	0.355*** (0.054) 0.367***
Non-GMO	0.462*** (0.056) 0.366***	0.532*** (0.060) 0.340***	0.413*** (0.052) 0.112
Brand A	0.069, (0.064) 0.706***	-0.057 (0.078) 0.996***	-0.040 (0.067) 0.834***
Health	1.025*** (0.125) 0.843***	0.775*** (0.128) 0.386***	0.702*** (0.104) 0.485***
Taste	0.631*** (0.132) 0.670***	0.318** (0.131) 0.061	0.381*** (0.117) 0.149
Safety	0.372*** (0.126) 0.640***	0.406** (0.186) 0.751***	0.272** (0.113) 0.248***
Animal Welfare	0.056 (0.119) 0.771***	0.596*** (0.129) 0.524***	0.140 (0.103) 0.318***

*The columns are designated by treatment and the rows are designated by each variable. The coefficient value is displayed first, followed by the standard error, and the estimates for the standard deviations.

Table 3 WTP medians and decomposition for control group

Label/Belief	Unobserved	Health	Taste	Safety	Animal Welfare	Estimated Median WTP
Organic	0.049	0.463	0.267	0.152	0.020	$6.060
No-Antibiotics	0.052	0.475	0.275	0.169	0.028	$5.851
No-Hormones	0.038	0.499	0.287	0.174	0.022	$5.615
Slow-Growth	0.063	0.462	0.288	0.163	0.015	$5.443
Non-GMO	0.052	0.483	0.283	0.175	0.029	$5.739
Brand A	0.011	0.458	0.300	0.175	0.026	$5.634
Brand B	0.000	0.466	0.306	0.180	0.026	$5.345

*The decomposition values are the estimated proportions of the medians. The values may not add to one due to rounding

Table 4 WTP medians and decomposition for pro-slow growth treatment

Label/Belief	Unobserved	Health	Taste	Safety	Animal Welfare	Estimated Median WTP
Organic	0.067	0.352	0.139	0.187	0.252	$5.322
No-Antibiotics	0.037	0.372	0.147	0.192	0.265	$5.053
No-Hormones	0.036	0.367	0.143	0.189	0.261	$5.155
Slow-Growth	0.084	0.337	0.143	0.182	0.266	$5.219
Non-GMO	0.063	0.353	0.138	0.183	0.246	$5.200
Brand A	-0.011	0.372	0.164	0.201	0.259	$4.498
Brand B	0.000	0.384	0.164	0.207	0.273	$4.663

*The decomposition values are the estimated proportions of the medians. The values may not add to one due to rounding

Table 5 WTP medians and decomposition for anti-slow growth treatment

Label/Belief	Unobserved	Health	Taste	Safety	Animal Welfare	Estimated Median WTP
Organic	0.078	0.456	0.235	0.17	0.084	$4.418
No-Antibiotics	0.058	0.465	0.237	0.175	0.084	$4.443
No-Hormones	0.065	0.458	0.237	0.169	0.08	$4.436
Slow-Growth	0.067	0.424	0.244	0.171	0.086	$4.074
Non-GMO	0.068	0.442	0.237	0.174	0.081	$4.453
Brand A	-0.015	0.47	0.281	0.191	0.081	$3.846
Brand B	0.000	0.481	0.277	0.189	0.088	$3.856

*The decomposition values are the estimated proportions of the medians. The values may not add to one due to rounding

Table 4: Correlations for control with no information

Label/Food Value	Natural	Taste	Price	Safety	Convenience	Nutrition	Novelty	Origin	Fairness	Appearance	Environment	Animal Welfare	Size
Organic	0.143	-0.043	-0.008	0.079	-0.092	-0.031	-0.0388	0.0772	-0.0449	-0.0509	0.0516	0.002	-0.0419
No-Antibiotics	0.032	0.012	-0.029	0.043	-0.094	0.073	-0.1468	0.0718	0.0593	-0.0394	0.0696	0.0881	-0.1251
No-Hormone	0.063	0.085	-0.042	-0.013	-0.131	0.085	-0.0293	-0.0007	-0.0359	-0.1119	0.0576	0.0437	0.0416
Slow Growth	-0.028	0.230	0.079	0.050	-0.052	0.078	-0.0986	-0.0612	-0.0786	-0.0499	-0.0136	0.0059	-0.0535
Non-GMO	0.035	0.075	0.008	0.081	-0.091	0.092	-0.1029	0.0283	-0.0062	0.0141	-0.0241	-0.0465	-0.0619
Brand A	-0.088	0.046	0.079	0.013	0.019	-0.002	0.0645	-0.1151	0.0039	0.0631	-0.039	-0.1039	0.0606
Health	-0.047	0.193	0.019	0.011	0.068	-0.003	0.0209	-0.0941	-0.0612	-0.0166	0.0002	-0.0777	0.0007
Taste	-0.142	0.145	0.039	-0.032	0.108	0.004	0.0453	-0.1161	-0.0846	0.025	-0.0147	-0.0328	0.0564
Safety	-0.052	0.162	-0.033	0.047	0.048	-0.069	0.0725	-0.1268	-0.0341	-0.0006	-0.0067	-0.0548	0.0711
Animal Welfare	0.013	0.030	-0.084	-0.010	-0.079	-0.009	-0.0453	-0.0663	0.0634	0.0136	0.0326	0.0867	0.0631

*The rows designate the variable; the columns designate the “food values” question.

Table 5: Correlations for Pro Slow Growth

Label/Food value	Natural	Taste	Price	Safety	Convenience	Nutrition	Novelty	Origin	Fairness	Appearance	Environment	Animal Welfare	Size
Organic	0.078	-0.067	-0.088	0.041	-0.089	0.045	0.057	-0.028	0.016	-0.023	0.098	0.085	-0.073
No-Antibiotics	0.043	0.018	0.013	0.056	-0.060	0.046	-0.050	-0.069	-0.039	0.004	-0.031	0.064	0.011
No-Hormone	0.085	-0.072	-0.011	0.059	-0.114	-0.032	0.017	0.117	-0.059	0.017	0.054	0.015	-0.060
Slow Growth	0.064	0.045	-0.033	0.042	-0.124	0.072	-0.094	0.035	0.066	-0.136	0.105	0.109	-0.095
Non-GMO	0.122	-0.021	-0.050	0.036	-0.084	-0.007	-0.057	0.082	-0.007	-0.084	0.111	0.097	-0.101
Brand A	0.050	0.035	0.100	0.064	0.002	-0.039	-0.079	0.002	-0.002	-0.112	-0.052	0.006	0.020
Health	0.013	0.006	-0.070	0.061	0.039	-0.026	0.008	-0.059	-0.092	0.064	-0.020	-0.016	0.079
Taste	0.083	-0.020	-0.102	0.068	0.055	-0.015	0.052	-0.073	-0.065	-0.015	0.030	0.025	-0.002
Safety	-0.104	0.023	0.014	-0.007	0.089	-0.026	0.004	-0.010	-0.135	0.103	-0.126	-0.084	0.187
Animal Welfare	0.003	-0.039	-0.030	-0.016	-0.040	0.027	0.013	0.010	-0.027	0.016	0.026	-0.062	0.099

*The rows designate the variable; the columns designate the “food values” question.

Table 6: Correlations in Anti Slow-Growth

Label/Food Value	Natural	Taste	Price	Safety	Convenience	Nutrition	Novelty	Origin	Fairness	Appearance	Environment	Animal Welfare	Size
Organic	0.139	-0.052	-0.145	0.099	-0.099	0.070	-0.127	0.033	0.031	0.038	0.072	0.030	-0.084
No-Antibiotics	0.036	0.049	0.008	0.101	-0.057	0.098	-0.090	-0.036	-0.027	0.026	0.009	0.001	-0.092
No-Hormone	0.080	-0.073	-0.121	0.095	-0.106	0.006	-0.067	0.039	0.033	0.000	0.107	0.135	-0.109
Slow Growth	0.043	-0.062	0.070	0.001	-0.040	0.029	-0.060	-0.067	0.053	0.033	-0.067	0.050	0.005
Non-GMO	0.114	0.082	-0.007	-0.020	0.033	0.046	-0.108	-0.041	-0.010	0.042	-0.046	-0.007	-0.082
Brand A	-0.124	0.033	0.102	-0.046	0.067	0.098	0.138	-0.126	-0.040	0.112	-0.092	-0.149	0.036
Health	0.052	-0.022	-0.029	0.015	0.104	0.065	-0.143	0.003	0.039	-0.038	-0.059	-0.004	-0.017
Taste	0.072	0.049	-0.062	0.024	-0.028	-0.020	-0.078	0.028	0.027	0.014	0.084	-0.002	-0.094
Safety	0.011	-0.049	-0.028	0.004	0.121	0.054	-0.055	-0.054	0.001	0.005	-0.008	-0.047	0.020
Animal Welfare	-0.035	-0.088	-0.094	-0.037	0.146	0.060	0.035	-0.021	0.115	-0.020	-0.092	0.003	0.006

*The rows designate the variable; the columns designate the “food values” question.

Table 7: Belief variable means, control group

Label/Belief	Health	Taste	Safety	Animal Welfare
Organic	4.11	3.85	3.96	3.63
No-antibiotics	3.94	3.79	3.87	3.48
No-hormone	3.97	3.78	3.87	3.53
Slow Growth	3.52	3.78	3.63	3.50
Non-GMO	4.00	3.79	3.94	3.54
Brand A	3.61	3.95	3.80	3.26
Brand B	3.65	3.80	3.80	3.30

Table 8: Belief variable means, pro-slow growth group

Label/Belief	Health	Taste	Safety	Animal Welfare
Organic	3.92	3.72	3.89	3.61
No-Antibiotics	3.96	3.76	3.86	3.55
No-Hormones	3.94	3.76	3.86	3.56
Slow Growth	3.73	3.82	3.75	3.74
Non-GMO	3.87	3.72	3.85	3.56
Brand A	3.59	3.84	3.72	3.22
Brand B	3.65	3.76	3.73	3.34

Table 9: Mean beliefs, anti-slow growth group

Label/Belief	Health	Taste	Safety	Animal Welfare
Organic	4.01	3.79	3.90	3.63
No-Antibiotics	3.93	3.76	3.82	3.53
No-Hormones	3.97	3.80	3.85	3.58
Slow Growth	3.42	3.70	3.65	3.42
Non-GMO	3.91	3.78	3.87	3.56
Brand A	3.59	3.88	3.74	3.18
Brand B	3.58	3.77	3.69	3.25

Table 10: Means of preferences from choice experiment by selection of food values

Label/Food Value	Natural	Taste	Price	Safety	Convenience	Nutrition	Novelty	Origin	Fairness	Appearance	Environment	Welfare	Size
	0.392	0.404	0.405	0.431	0.457	0.430	0.438	0.426	0.443	0.457	0.423	0.418	0.449
	0.435	0.467	0.482	0.400	0.422	0.446	0.423	0.417	0.428	0.429	0.431	0.447	0.404
Organic	0.471	0.419	0.422	0.452	0.410	0.419	0.409	0.489	0.416	0.424	0.463	0.415	0.433
	0.025**	0.115	0.053	0.098	0.197	0.564	0.766	0.086	0.697	0.556	0.551	0.398	0.266
	0.133	0.403	0.067	0.068	0.344	0.279	0.803	0.158	0.359	0.614	0.561	0.968	0.493
	0.438	0.432	0.452	0.444	0.459	0.423	0.455	0.431	0.417	0.450	0.429	0.414	0.461
	0.436	0.442	0.437	0.427	0.421	0.439	0.421	0.445	0.466	0.442	0.444	0.452	0.424
No-Antibiotics	0.450	0.441	0.439	0.448	0.428	0.451	0.371	0.459	0.412	0.435	0.458	0.447	0.421
	0.715	0.946	0.781	0.409	0.147	0.386	0.020**	0.401	0.003**	0.759	0.422	0.092	0.037**
	0.634	0.936	0.414	0.233	0.097	0.600	0.058	0.344	0.009**	0.541	0.399	0.050	0.086
	0.297	0.272	0.304	0.309	0.318	0.291	0.308	0.310	0.306	0.322	0.301	0.298	0.303
	0.308	0.309	0.316	0.305	0.302	0.306	0.300	0.294	0.309	0.306	0.305	0.308	0.303
No-Hormones	0.310	0.308	0.301	0.305	0.291	0.311	0.311	0.319	0.291	0.296	0.318	0.308	0.312
	0.444	0.061	0.393	0.964	0.045	0.232	0.672	0.082	0.435	0.102	0.480	0.588	0.641
	0.136	0.689	0.015**	0.800	0.008	0.229	0.832	0.125	0.899	0.080	0.047	0.545	0.951
	0.507	0.438	0.502	0.505	0.520	0.506	0.521	0.517	0.510	0.519	0.509	0.503	0.520
	0.524	0.509	0.503	0.508	0.505	0.505	0.493	0.512	0.525	0.514	0.517	0.522	0.501
Slow Growth	0.500	0.524	0.518	0.516	0.510	0.523	0.528	0.499	0.467	0.507	0.499	0.501	0.510
	0.101	0.000**	0.273	0.624	0.378	0.213	0.019**	0.475	0.001**	0.642	0.415	0.122	0.273
	0.032**	0.042**	0.667	0.674	0.033**	0.749	0.292	0.130	0.099	0.761	0.594	0.185	0.156
	0.445	0.394	0.464	0.419	0.473	0.434	0.468	0.451	0.437	0.453	0.452	0.461	0.467
	0.459	0.463	0.435	0.451	0.445	0.448	0.429	0.455	0.483	0.452	0.463	0.458	0.439
Non-GMO	0.459	0.459	0.459	0.463	0.439	0.472	0.445	0.464	0.394	0.458	0.428	0.438	0.447
	0.746	0.079	0.441	0.274	0.186	0.211	0.085	0.855	0.001**	0.952	0.371	0.601	0.319
	0.924	0.307	0.446	0.170	0.245	0.680	0.433	0.918	0.009**	0.791	0.523	0.645	0.410
	0.121	-0.015	0.014	0.068	0.074	0.088	0.069	0.126	0.091	0.054	0.114	0.159	0.067
	0.113	0.101	0.084	0.088	0.099	0.090	0.110	0.094	0.080	0.070	0.075	0.074	0.080
Brand A	0.017	0.096	0.111	0.091	0.093	0.086	0.202	-0.035	0.108	0.125	0.071	0.029	0.135
	0.163	0.417	0.306	0.961	0.894	0.997	0.449	0.061	0.925	0.456	0.718	0.134	0.484
	0.137	0.462	0.197	0.909	0.917	0.992	0.337	0.081	0.894	0.497	0.492	0.533	0.758
	1.040	0.787	0.982	0.902	0.968	1.045	0.998	1.061	1.031	1.037	1.007	1.068	1.015
	1.011	0.957	1.033	1.069	1.043	0.986	1.055	0.977	1.021	1.003	1.020	0.999	1.004
Health	0.986	1.072	1.014	0.999	1.038	1.026	0.902	0.961	0.923	1.011	0.999	0.972	1.018
	0.675	0.001**	0.787	0.110	0.319	0.590	0.330	0.167	0.351	0.871	0.943	0.310	0.972
	0.919	0.046**	0.742	0.119	0.231	0.511	0.307	0.271	0.754	0.594	0.948	0.411	0.989

*The first three numbers are the means for each label given the food value is rated as “most important”, “neither”, or “least important”. The fourth number is the p-value from an ANOVA test and the fifth value is the p-value from the Kruskal-Wallis test

Table 10 Continued

Label/Food Value	Natural	Taste	Price	Safety	Convenience	Nutrition	Novelty	Origin	Fairness	Appearance	Environment	Welfare	Size
	0.685	0.517	0.603	0.532	0.592	0.620	0.609	0.648	0.640	0.612	0.631	0.639	0.599
	0.606	0.584	0.606	0.692	0.608	0.618	0.638	0.619	0.623	0.614	0.610	0.613	0.638
Taste	0.573	0.653	0.630	0.593	0.678	0.622	0.643	0.541	0.545	0.631	0.627	0.612	0.638
	0.021**	0.023**	0.742	0.003**	0.092	0.994	0.675	0.070	0.195	0.873	0.829	0.765	0.492
	0.013**	0.041**	0.623	0.004**	0.026**	0.972	0.439	0.044**	0.120	0.845	0.642	0.619	0.290
	0.388	0.232	0.397	0.291	0.361	0.409	0.354	0.418	0.382	0.361	0.376	0.394	0.352
	0.377	0.352	0.365	0.394	0.366	0.373	0.408	0.334	0.371	0.383	0.369	0.370	0.381
Safety	0.349	0.402	0.368	0.373	0.397	0.353	0.371	0.336	0.349	0.366	0.373	0.349	0.400
	0.598	0.006**	0.744	0.161	0.612	0.417	0.248	0.024**	0.802	0.833	0.980	0.587	0.405
	0.692	0.021**	0.691	0.114	0.714	0.277	0.128	0.016**	0.242	0.605	0.775	0.751	0.761
	0.071	0.016	0.125	0.055	0.108	0.111	0.077	0.078	0.059	0.072	0.046	0.033	0.045
	0.061	0.079	0.078	0.086	0.046	0.039	0.069	0.093	0.059	0.061	0.089	0.072	0.093
Animal Welfare	0.082	0.073	0.051	0.064	0.047	0.085	-0.031	-0.007	0.149	0.080	0.060	0.116	0.091
	0.887	0.638	0.278	0.807	0.231	0.260	0.490	0.148	0.242	0.893	0.520	0.262	0.404
	0.840	0.452	0.233	0.725	0.231	0.127	0.843	0.219	0.457	0.740	0.138	0.423	0.593

*The first three numbers are the means for each label given the food value is rated as “most important”, “neither”, or “least important”. The fourth number is the p-value from an ANOVA test and the fifth value is the p-value from the Kruskal-Wallis test

Table 11: Pro-Slow Growth Means for food values

Label/Q13	Natural	Taste	Price	Safety	Convenience	Nutrition	Novelty	Origin	Fairness	Appearance	Environment	Animal Welfare	Size
Organic	0.556	0.614	0.567	0.548	0.584	0.558	0.551	0.571	0.544	0.546	0.546	0.536	0.559
	0.537	0.557	0.603	0.549	0.529	0.543	0.566	0.537	0.574	0.578	0.555	0.560	0.583
	0.596	0.551	0.544	0.563	0.553	0.574	0.587	0.566	0.527	0.544	0.624	0.578	0.522
	0.041**	0.287	0.051	0.735	0.035**	0.336	0.589	0.230	0.161	0.210	0.080	0.302	0.041**
	0.012**	0.334	0.014**	0.990	0.042**	0.268	0.420	0.189	0.228	0.208	0.057	0.680	0.140
No-Antibiotics	0.288	0.287	0.290	0.289	0.302	0.294	0.297	0.309	0.296	0.285	0.294	0.279	0.281
	0.293	0.292	0.292	0.284	0.289	0.283	0.286	0.277	0.295	0.302	0.296	0.298	0.326
	0.301	0.295	0.294	0.300	0.285	0.306	0.280	0.293	0.276	0.290	0.271	0.300	0.275
	0.738	0.951	0.972	0.506	0.536	0.304	0.663	0.099	0.633	0.559	0.575	0.421	0.003**
	0.715	0.869	0.974	0.405	0.565	0.193	0.893	0.084	0.752	0.615	0.491	0.618	0.012**
No-Hormones	0.282	0.321	0.295	0.313	0.318	0.307	0.299	0.291	0.314	0.300	0.291	0.300	0.302
	0.304	0.315	0.318	0.281	0.304	0.303	0.304	0.282	0.293	0.296	0.305	0.298	0.322
	0.319	0.290	0.298	0.312	0.270	0.293	0.308	0.351	0.289	0.305	0.321	0.309	0.271
	0.305	0.400	0.689	0.261	0.104	0.839	0.957	0.013**	0.522	0.897	0.620	0.918	0.117
	0.270	0.308	0.402	0.338	0.072	0.928	0.986	0.003**	0.773	0.881	0.659	0.772	0.134
Slow Growth	0.708	0.604	0.775	0.541	0.802	0.690	0.754	0.711	0.698	0.820	0.667	0.658	0.798
	0.719	0.740	0.711	0.759	0.690	0.721	0.702	0.742	0.748	0.745	0.776	0.744	0.643
	0.785	0.738	0.726	0.731	0.678	0.770	0.579	0.747	0.777	0.670	0.755	0.796	0.720
	0.430	0.405	0.707	0.125	0.049**	0.424	0.209	0.789	0.482	0.047**	0.082	0.137	0.018**
	0.701	0.306	0.958	0.319	0.151	0.635	0.107	0.592	0.618	0.105	0.272	0.212	0.059
Non-GMO	0.504	0.491	0.541	0.526	0.543	0.538	0.537	0.520	0.527	0.547	0.504	0.495	0.550
	0.531	0.546	0.538	0.519	0.523	0.519	0.499	0.518	0.529	0.532	0.543	0.540	0.504
	0.554	0.521	0.522	0.533	0.511	0.532	0.556	0.559	0.521	0.512	0.543	0.535	0.517
	0.088	0.218	0.649	0.725	0.311	0.664	0.111	0.165	0.954	0.318	0.082	0.075	0.057
	0.051	0.135	0.763	0.939	0.186	0.375	0.054	0.161	0.805	0.168	0.160	0.022**	0.014**
Brand A	-0.082	-0.332	-0.297	-0.247	-0.015	0.078	-0.011	-0.045	-0.068	0.069	-0.031	-0.079	-0.074
	-0.061	0.001	0.081	-0.065	-0.131	-0.133	-0.117	-0.059	-0.016	-0.020	-0.032	-0.027	-0.016
	0.019	-0.051	-0.022	-0.020	0.007	-0.028	-0.193	-0.037	-0.128	-0.138	-0.245	-0.076	-0.045
	0.623	0.178	0.020**	0.428	0.333	0.119	0.361	0.977	0.651	0.127	0.342	0.822	0.830
	0.992	0.466	0.009**	0.655	0.217	0.066	0.728	0.689	0.743	0.116	0.046**	0.678	0.639
Health	0.767	0.776	0.778	0.751	0.768	0.774	0.768	0.779	0.788	0.752	0.773	0.760	0.750
	0.768	0.765	0.800	0.759	0.758	0.770	0.769	0.765	0.757	0.769	0.765	0.780	0.791
	0.773	0.770	0.759	0.777	0.785	0.764	0.777	0.757	0.753	0.778	0.769	0.747	0.775
	0.960	0.930	0.191	0.532	0.456	0.891	0.975	0.564	0.199	0.502	0.905	0.313	0.114
	0.933	0.994	0.335	0.487	0.866	0.866	0.934	0.372	0.216	0.218	0.446	0.550	0.082

*The first three numbers are the means for each label given the food value is rated as “most important”, “neither”, or “least important”. The fourth number is the p-value from an ANOVA test and the fifth value is the p-value from the Kruskal-Wallis test

Table 11 Continued

Label/Q13	Natural	Taste	Price	Safety	Convenience	Nutrition	Novelty	Origin	Fairness	Appearance	Environment	Animal Welfare	Size
Taste	0.309	0.313	0.320	0.304	0.313	0.314	0.312	0.317	0.316	0.313	0.312	0.310	0.312
	0.313	0.313	0.320	0.311	0.307	0.313	0.317	0.311	0.312	0.314	0.314	0.315	0.316
	0.319	0.318	0.310	0.315	0.320	0.313	0.316	0.310	0.309	0.312	0.315	0.313	0.311
	0.312	0.882	0.144	0.455	0.088	0.964	0.604	0.348	0.491	0.928	0.854	0.698	0.689
	0.716	0.915	0.120	0.372	0.237	0.926	0.461	0.103	0.390	0.132	0.581	0.793	0.191
Safety	0.462	0.383	0.364	0.289	0.357	0.428	0.390	0.375	0.453	0.338	0.448	0.419	0.326
	0.364	0.383	0.427	0.432	0.401	0.377	0.415	0.442	0.371	0.378	0.371	0.411	0.400
	0.359	0.403	0.394	0.382	0.444	0.395	0.348	0.346	0.291	0.440	0.284	0.308	0.510
	0.096	0.902	0.712	0.280	0.278	0.660	0.779	0.195	0.050**	0.172	0.073	0.176	0.003**
	0.121	0.978	0.717	0.318	0.437	0.817	0.664	0.197	0.030**	0.192	0.131	0.335	0.002**
Animal Welfare	0.560	0.560	0.558	0.560	0.569	0.551	0.552	0.549	0.558	0.553	0.544	0.571	0.538
	0.544	0.566	0.575	0.558	0.539	0.547	0.560	0.560	0.556	0.547	0.562	0.554	0.543
	0.564	0.546	0.548	0.551	0.551	0.564	0.554	0.552	0.532	0.560	0.549	0.530	0.595
	0.764	0.722	0.704	0.957	0.542	0.810	0.953	0.916	0.813	0.895	0.769	0.526	0.135
	0.834	0.898	0.636	0.793	0.635	0.643	0.797	0.687	0.726	0.950	0.907	0.340	0.030**

*The first three numbers are the means for each label given the food value is rated as “most important”, “neither”, or “least important”. The fourth number is the p-value from an ANOVA test and the fifth value is the p-value from the Kruskal-Wallis test

Table 12: Anti-Slow Growth Means for food values

Label/Food Value	Natural	Taste	Price	Food Safety	Convenience	Nutrition	Novelty	Origin	Fairness	Appearance	Environment	Welfare	Size
Organic	0.439	0.442	0.522	0.437	0.477	0.431	0.472	0.459	0.453	0.451	0.448	0.454	0.468
	0.460	0.477	0.448	0.448	0.451	0.466	0.442	0.453	0.468	0.462	0.468	0.461	0.463
	0.489	0.450	0.453	0.472	0.447	0.465	0.421	0.473	0.457	0.464	0.470	0.465	0.440
	0.036**	0.146	0.003**	0.180	0.146	0.190	0.063	0.537	0.613	0.752	0.345	0.859	0.265
	0.028**	0.081	0.044*8	0.144	0.118	0.259	0.201	0.195	0.782	0.729	0.608	0.838	0.508
No-Antibiotics	0.348	0.347	0.357	0.345	0.365	0.354	0.364	0.361	0.358	0.353	0.354	0.343	0.366
	0.365	0.353	0.356	0.345	0.357	0.345	0.351	0.360	0.363	0.359	0.364	0.373	0.358
	0.357	0.363	0.359	0.369	0.349	0.376	0.324	0.350	0.340	0.361	0.350	0.345	0.340
	0.452	0.660	0.977	0.130	0.578	0.058	0.242	0.773	0.491	0.886	0.657	0.059	0.231
	0.579	0.903	0.925	0.156	0.394	0.126	0.295	0.540	0.521	0.826	0.932	0.071	0.409
No-hormones	0.371	0.355	0.431	0.278	0.396	0.368	0.381	0.353	0.358	0.360	0.339	0.342	0.389
	0.340	0.397	0.381	0.369	0.357	0.367	0.340	0.387	0.378	0.379	0.385	0.353	0.360
	0.426	0.349	0.353	0.380	0.341	0.371	0.371	0.369	0.370	0.363	0.397	0.420	0.333
	0.013**	0.132	0.080	0.087	0.136	0.989	0.260	0.436	0.718	0.773	0.116	0.021**	0.135
	0.011**	0.195	0.094	0.095	0.101	0.985	0.193	0.216	0.892	0.607	0.084	0.035**	0.127
Slow Growth	0.355	0.352	0.343	0.379	0.369	0.349	0.366	0.374	0.357	0.365	0.379	0.344	0.360
	0.363	0.383	0.347	0.357	0.364	0.365	0.368	0.362	0.363	0.349	0.353	0.370	0.371
	0.375	0.350	0.371	0.365	0.352	0.366	0.294	0.346	0.389	0.376	0.354	0.367	0.360
	0.727	0.204	0.410	0.801	0.752	0.791	0.183	0.472	0.551	0.433	0.366	0.466	0.872
	0.700	0.158	0.513	0.500	0.524	0.580	0.176	0.792	0.745	0.330	0.468	0.205	0.730
Non-GMO	0.402	0.395	0.413	0.405	0.410	0.400	0.412	0.410	0.410	0.405	0.408	0.409	0.412
	0.409	0.407	0.405	0.412	0.403	0.411	0.406	0.410	0.408	0.409	0.412	0.409	0.408
	0.417	0.412	0.409	0.407	0.416	0.409	0.387	0.405	0.410	0.411	0.395	0.408	0.402
	0.110	0.271	0.718	0.638	0.155	0.380	0.088	0.668	0.924	0.730	0.131	0.992	0.316
	0.239	0.516	0.850	0.132	0.326	0.628	0.544	0.294	0.239	0.237	0.423	0.760	0.981
Brand A	0.065	0.290	-0.122	-0.048	-0.067	-0.173	-0.072	0.044	-0.028	-0.181	0.005	0.122	-0.053
	-0.038	-0.169	-0.119	0.021	-0.028	-0.016	0.006	-0.041	0.006	0.038	-0.011	-0.052	0.005
	-0.132	0.034	0.014	-0.061	0.033	0.015	0.311	-0.141	-0.158	0.004	-0.210	-0.118	-0.011
	0.074	0.000**	0.131	0.449	0.460	0.126	0.018**	0.067	0.269	0.017**	0.098	0.016**	0.703
	0.068	0.001**	0.040**	0.133	0.466	0.123	0.112	0.083	0.339	0.005**	0.125	0.041**	0.722
Health	0.673	0.657	0.715	0.719	0.674	0.675	0.712	0.694	0.688	0.694	0.703	0.702	0.696
	0.703	0.714	0.690	0.680	0.690	0.686	0.678	0.692	0.693	0.710	0.696	0.687	0.697
	0.702	0.684	0.691	0.701	0.733	0.712	0.571	0.696	0.719	0.677	0.653	0.699	0.686
	0.516	0.317	0.795	0.578	0.137	0.470	0.017**	0.992	0.708	0.462	0.429	0.849	0.926
	0.794	0.307	0.720	0.811	0.074	0.382	0.125	0.879	0.990	0.209	0.585	0.737	0.874

*The first three numbers are the means for each label given the food value is rated as “most important”, “neither”, or “least important”. The fourth number is the p-value from an ANOVA test and the fifth value is the p-value from the Kruskal-Wallis test

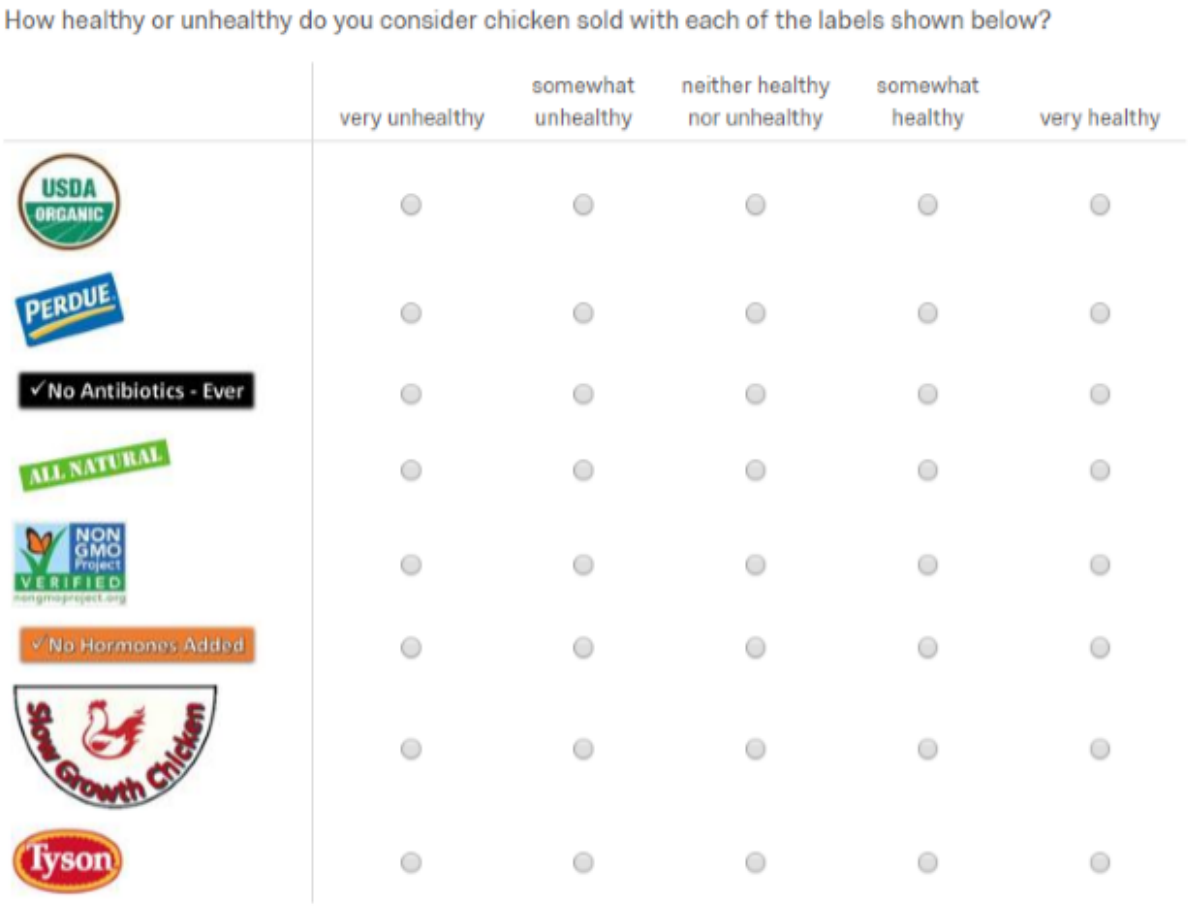
Table 12 Continued

Label/Food Value	Natural	Taste	Price	Food Safety	Convenience	Nutrition	Novelty	Origin	Fairness	Appearance	Environment	Welfare	Size
Taste	0.373	0.364	0.383	0.384	0.382	0.379	0.380	0.376	0.376	0.380	0.373	0.379	0.382
	0.380	0.379	0.383	0.374	0.373	0.379	0.379	0.381	0.380	0.375	0.380	0.378	0.377
	0.383	0.379	0.376	0.380	0.380	0.377	0.355	0.378	0.378	0.381	0.386	0.378	0.371
	0.389	0.364	0.466	0.437	0.336	0.923	0.124	0.709	0.765	0.615	0.309	0.986	0.223
	0.792	0.875	0.040**	0.140	0.998	0.977	0.259	0.669	0.577	0.442	0.076	0.482	0.786
Safety	0.262	0.253	0.277	0.273	0.254	0.257	0.268	0.270	0.267	0.264	0.266	0.277	0.263
	0.267	0.276	0.259	0.262	0.271	0.265	0.263	0.264	0.262	0.267	0.266	0.260	0.271
	0.266	0.260	0.265	0.267	0.277	0.270	0.251	0.260	0.273	0.265	0.264	0.266	0.265
	0.949	0.129	0.492	0.796	0.069	0.603	0.585	0.610	0.688	0.952	0.987	0.296	0.752
	0.277	0.201	0.212	0.884	0.164	0.531	0.749	0.558	0.915	0.218	0.820	0.186	0.678
Animal Welfare	0.152	0.173	0.174	0.185	0.136	0.155	0.147	0.151	0.139	0.146	0.157	0.152	0.148
	0.151	0.154	0.148	0.142	0.149	0.138	0.155	0.150	0.154	0.158	0.148	0.146	0.154
	0.143	0.143	0.145	0.150	0.171	0.162	0.151	0.146	0.170	0.143	0.128	0.153	0.147
	0.773	0.260	0.156	0.091	0.024**	0.076	0.749	0.921	0.107	0.395	0.209	0.801	0.830
	0.992	0.419	0.156	0.252	0.036	0.038	0.749	0.961	0.211	0.178	0.340	0.709	0.800

*The first three numbers are the means for each label given the food value is rated as “most important”, “neither”, or “least important”. The fourth number is the p-value from an ANOVA test and the fifth value is the p-value from the Kruskal-Wallis test

Figure 1: Choice Experiment

Figure 2: Example Belief Question



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