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Health Consciousness and Consumer Preferences for Holiday Turkey Attributes

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Abstract

An online survey of 620 respondents was utilized to elicit consumer preferences for six holiday turkey attributes (price, weight, antibiotic free, local, pasture access, and brand) related to aspects of food purchasing, including healthfulness, food safety, and treatment of animals. To explore possible relationships in consumer perceptions of holiday turkey attributes and lifestyle factors, respondents were asked about their health consciousness. Those who indicated they would consume turkey for one or more holiday meal were generally rated more health conscious. Price was the most important attribute and the preference share for price was negatively correlated with health consciousness.

Keywords: best-worst scaling, consumer preference, health conscious, holidays, maximum-difference scaling, turkey

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Introduction

Consumer-focused media during the winter holiday season in the United States, typically recognized as lasting from Thanksgiving Day through New Year's Day, is often focused on food consumption. Food is a large part of the holiday season festivities, including holiday parties focused around large meals, gifting of food items, and indulgent desserts. Given the season of indulgence, or overindulgence, it is not surprising that a major focus on weight loss, exercise, and health follows with the establishment of New Year's resolutions. Thus, a significant portion of the discussion surrounding, and resulting from, the holiday season relates to decisions which impact health and well-being.

There are a number of factors involved in holiday eating decisions that make them unique from food choices the rest of the year, including: vacation or holiday time off of work and away from the usual routine/schedule, visiting with friends and family, hectic and stressful travel plans, and traditional winter holiday meals. Highly palatable foods, which are often high in fat and/or sugar, are more available during the holiday season (Stevenson et al. 2013). Previous research has found that the amount of "unhealthy" food purchased increases during the holiday season and remains elevated for a few weeks thereafter (Pope et al. 2014). Other work has highlighted significant increases in bodyweight, body fat percentage, blood pressure, and resting heart rate in healthy adults during the holiday season (Stevenson et al. 2013). As the holiday which is celebrated primarily with a large meal, the health implications of Thanksgiving, in terms of weight gain, have long been assumed in the popular press. In addition, past research did find evidence of weight gain over the Thanksgiving holiday in college students (Hull et al. 2006).

In recent years, a large literature has been devoted to US consumption patterns and shopper preferences for product attributes, which range from product pricing to social or environmental sustainability aspects of food production (Olynk et al. 2010; Tonsor et al. 2009; Briggeman and Lusk 2011). While production processes employed in the production of meat, eggs, and dairy products are one area of concern for US shoppers, the safety, nutritional quality, and social or environmental impacts of that food product are also increasingly important. Turkey is a popular holiday entrée, particularly for Thanksgiving. Of the 200 million turkeys consumed in the United States every year, more than 20% are consumed on Thanksgiving and over 10% are consumed on Christmas (National Turkey Federation 2015). In fact, a National Turkey Federation survey found 88% of Americans eat turkey on Thanksgiving (National Turkey Federation 2015). However, the research on consumer demand for whole turkeys is sparse, likely due, at least in part, to the infrequent purchasing of whole turkeys by consumers.

In addition to impacting eating decisions, factors like parties, travel, and plentiful sweets may influence other decisions that ultimately impact health, such as exercising. Stevenson et al. (2013) studied physical activity and concluded that the holiday season may indeed have negative health impacts and that future studies on weight loss or maintenance should focus on the holiday season. Assessments of policies for improving consumption patterns (Powell et al. 2013), eating behaviors on weekends versus weekdays (Haines et al. 2003), and eating at holiday gatherings have contributed to spirited conversations which link health outcomes to consumer decision making. Measuring health outcomes necessarily links consumption behaviors with other lifestyle factors, such as exercise and health consciousness.

Turkey is generally considered a healthy protein option that, along with other poultry and fish, is frequently recommended as an alternative to other meats. Thus, it is logical to study preferences for turkey attributes during the holiday season. Turkey is suggested by some economists to be a "loss leader" during the Thanksgiving season (DeGraba 2006). This suggests consumers may be making purchasing decisions based on low turkey prices. However, price is unlikely to be the sole factor in turkey selection and meal decision making. The number of people served is directly related to turkey weight (size). Furthermore, attributes such as being raised locally, in a system with pasture access or that prohibits the use of antibiotics, or being marketed under a brand name may also influence consumer purchasing decisions. Many of these factors are perceived to be related to product healthfulness, regardless of whether scientific evidence exists to support those sentiments. Furthermore, socially minded consumers place significant emphasis on factors like local production and supporting local economies. Understanding relative consumer ranking of these attributes in terms of importance is key for turkey retailers and producers, and perhaps informs the production and marketing of other holiday fare.

The primary objective of this work is to identify the relative ranking in importance of six holiday turkey attributes, namely price, weight, antibiotic free, local, pasture access, and brand. Due to the popularity of turkey as a holiday entrée, a secondary goal of this paper is to analyze possible linkages between self-reported health consciousness and turkey purchasing preferences. Linking the importance of key turkey attributes, which may be perceived to be related to healthfulness, food safety, animal welfare and potentially other factors to health-related behaviors during the holidays and year-round can aid in understanding consumer demand. While there has been extensive research on desired meat product attributes, little is known about holiday meat (including turkey) purchases with respect to consumer demand for specific attributes.

Methodology

Data Collection

An online survey was administered between November 17–19, 2014 to obtain information regarding US consumer plans for holiday shopping, spending, and meal planning, as well as socio-demographic characteristics. Survey respondents were asked a series of questions about their plans for the upcoming holiday season. Specifically, questions focused on holiday meal planning, including what type of meat or protein was being served. The week of November 17 was targeted to allow respondents to complete the survey, which focused on holiday spending and meal planning intentions, immediately preceding the holiday season. Survey respondents were obtained through the use of a large proprietary opt-in panel database by Lightspeed, GMI.[1] The sample was targeted to be representative of the US population in terms of gender, income, education, and geographical region of residence. Regions of residence were defined as in the Census Bureau Regions and Divisions.[2] Respondents were required to be 18 years of age or older to participate. A total of 620 respondents completed the survey.

[1] Lightspeed, GMI is a leading provider of online access panels for global market research; Lightspeed, GMI has millions of highly profiled and engaged panelists from countries around the world.

[2] The four regions included were Northeast, South, Midwest, and West. Regions were defined, according to the U.S. Census Bureau.

In addition to general demographic questions, this analysis also sought to evaluate respondent health intentions during the holiday season. Three holiday health intentions were evaluated by asking participants to respond to statements, including: *I will make a New Year's resolution to lose weight, I will maintain my workout schedule during the holiday season, I will be vigilant about my weight during the holiday season,* and *I watch what I eat during the holiday season.* In addition to the holiday-specific, health-related statements, the health consciousness scale, consisting of nine statements, from Gould (1988) was also utilized. The nine statements included in the scale (Gould, 1988) were: *I reflect about my health a lot, I'm very self-conscious about my health, I'm generally attentive to my inner feelings about my health, I'm constantly examining my health, I'm alert to changes in my health, I'm usually aware of my health, I'm aware of the state of my health as I go through the day, I notice how I feel physically as I go through the day,* and *I'm very involved in my health.* Both the holiday health intentions (three in total) and the health consciousness statements (nine in total) asked respondents to select an option from a five point scale, specifically "Please indicate how well the statements describe you." Following Gould (1988), the response options consisted of:

1 – It describes you very well,
2 – It describes you fairly well,
3 – It describes you fifty-fifty,
4 – It describes you a little, or
5 – This statement does not describe you at all.

Experimental Design and Econometric Analysis

Respondents were also presented with a best-worst scaling question to assess their preferences among six holiday turkey attributes: price, weight, antibiotic free, local, pasture access, and brand. Likert-scale or ranking-type questions have been used to gather information on the importance of product attributes. One issue with Likert-scale answers, however, is that participants can classify all attributes as important (or unimportant) or may assign all attributes equal importance. Maximum difference scaling, also called best-worst scaling, is considered superior to asking consumers to rate an attribute because it forces respondents to make tradeoffs that more closely reflect actual choices (Lusk and Briggeman 2009; Flynn et al. 2007).

Price was included as an attribute and was expected to be important to the majority of consumers, especially in light of the fact that many stores market holiday turkeys based on low prices. Given the focus on turkey prices by supermarkets, in an effort to solicit additional holiday shopping in their stores, price-based decision making for holiday turkeys was hypothesized to be a main focus for at least some segment of consumers. Furthermore, price was expected to be negatively correlated with at least some of the other attributes included as shoppers were forced to make tradeoffs of price for other turkey attributes. Turkey weight was included as an attribute of interest mainly because consumers' choose a turkey (or turkey product) based on the number of people served. Given the attention to brand in the marketing of holiday turkeys, brand was also included as an attribute of interest in this analysis. Well-known turkey brands are often used as loss leaders (DeGraba 2006). Likewise, branding fresh meats can serve to differentiate the product in the minds of consumers where the brand signals quality to the consumer (Grunert et al. 2004).

Pasture access was included because at least some consumers perceive pastured poultry to be healthier (Sossidou et al. 2011). Likewise, given the media attention and concern over antibiotic use in food animals, it was possible that some consumers perceive meats coming from animals raised in antibiotic free production systems to be healthier as well. In recent years, local meat production has garnered increased attention from consumers. Thus, "local" was included as an attribute in the maximum difference scaling question. Media campaigns often mention strategies for procuring locally raised holiday turkeys, which are marketed as a specialty item and often sold at prices far above the promotional prices marketed by retail supermarkets. Previous research has found that consumers are willing to pay a premium for locally produced meat (Maynard et al. 2003) and want to purchase products produced in their own state (Jekanowski et al. 2000). Together, the six attributes studied represent factors likely to enter the decision making process of consumers when shopping for holiday turkey.

Respondents who indicated that they planned to consume turkey over the holiday season 2014 were shown sets of three turkey attributes and asked to choose the attribute that was most important (best) to them as well as which was the least important (worst). Survey participants were each shown a total of 10 scenarios (or choice occasions). Following the experimental design, each attribute could potentially be selected by each respondent between zero and five times. The scenarios presented included six attributes (*j*). Here $J = 6$ indexes the attributes and there are a total of $J * (J - 1) = 30$ potential combinations of best-worst rankings that could have been chosen by each respondent. The respondents' choices of the most important and least important turkey attributes were used to determine each attribute's location along a continuum of importance when selecting a turkey. The location of the value attribute on the scale of importance for turkey purchasing is represented by λ_j. Thus, the level of importance, which is unobservable to researchers, for respondent (consumer) *i* is:

$$(1)\ I_{ij} = \lambda_j + \varepsilon_{ij}$$

where ε_{ij} denotes a random error term. The probability that the consumer i chooses attribute j as the most important attribute and attribute k as the least important attribute is the probability that the difference between I_{ij} and I_{ik} is greater than all $J * (J - 1) - 1 = 29$ potential differences available from the choices presented to each survey respondent. Assuming the error term is independently and identically distributed type I extreme value, the probability of choosing a given most important-least important combination takes the multinomial logit form (Lusk and Briggeman 2009) represented by:

$$(2)\ Prob(j = best \cap k = worst) = \frac{e^{\lambda_j - \lambda_k}}{\sum_{l=1}^{J}\sum_{m=1}^{J} e^{\lambda_j - \lambda_k - J}}$$

Maximum likelihood estimation (MLE) is used to estimate the parameter λ_j which represents how important turkey attribute j is relative to the least important turkey attribute. The least important attribute is not known ex ante, but is determined through analysis of responses and its value must be normalized to zero to prevent the "dummy variable trap" (Lusk and Briggeman 2009).

Heterogeneity of preferences is discrete in latent class models (LCM) (Train 2003), making the LCM particularly insightful for evaluating preferences for a retail product. Respondents are sorted into a specified number of classes or segments with homogeneous preferences within each class and heterogeneous preferences between classes (Boxall and Adamowicz 2002). Incorporating heterogeneity in this discrete fashion is useful in this application because classes of similar consumers can be identified and their preferences characterized as a single "consumer segment." During the estimation process, individuals are assigned to a latent class and simultaneously parameters for each class are estimated (Swait 1994). Each respondent's choices were assumed to be independent within a class (Wolf and Tonsor 2013). Given that the respondent belongs to a specific latent class, denoted as *s*, the conditional probability of choices is represented as:

$$(3)\ (Prob(j = best\ \cap k = worst)|s) = \frac{e^{\lambda_{js} - \lambda_{ks}}}{\sum_{l=1}^{J}\sum_{m=1}^{J} e^{\lambda_{js} - \lambda_{ks} - J}}$$

where the λ_{js} and λ_{ks} parameters are class specific (Ouma et al. 2007). These classes are unobservable and the probability of membership in a class takes the multinomial logit form

$$(4)\ Prob(s) = \frac{e^{(\theta_s Zk)}}{\sum_{s=1}^{S} e^{\theta_s Zk}}$$

where Zk is a set of hypothesized drivers of class membership and $\theta_s$is a parameter vector that is normalized to zero that characterizes the impact the drivers have on class membership (Ouma et al. 2007). Parameter estimates are not intuitive to interpret, so shares of preferences are calculated to facilitate the ease of interpretation. The shares of preferences are calculated as:

$$(5)\ share_j = \frac{e^{\hat{\lambda}_j}}{\sum_{k=1}^{J} e^{\hat{\lambda}_k}}$$

Preference shares provide a more intuitive means of analyzing relationships between the attributes explored than the coefficient estimates (Wolf and Tonsor 2013). The shares must sum to one across the six attributes. The calculated preference share for each attribute is the forecasted probability that each attribute is chosen as the most important (Wolf and Tonsor 2013).

A random parameters logit (RPL), model was also specified to allow for continuous heterogeneity among individuals, following Lusk and Briggeman (2009). Individual-specific preference shares were calculated using individual-specific parameter estimates from the RPL model. Individual preference shares were used to analyze relationships (correlations) between preference shares and demographics, as well as other factors of interest, including the respondent's other holiday intentions or reported behaviors. Estimations were performed in NLOGIT 5.0.

Results and Discussion

Table 1 presents the demographics of all 620 respondents as well as the subsamples who indicated that they would or would not consume turkey at a 2014 holiday meal. Seventeen

percent of respondents were from the Northeast, while 37 % resided in the South, 24% resided in the Midwest, and 22% resided in the West. The survey mean household size was 2.54 persons while the US average household size was 2.61 (U.S. Census Bureau 2014). In total, 74% of respondents indicated they would be having turkey at a holiday meal in 2014. The mean age of respondents who indicated they would have turkey at a holiday meal was 47.5 years old.

Table 1. Respondent Demographics

Demographic Variable	**All Respondents** n=620	**Reportedly having turkey at a 2014 Holiday meal** n=461	**Reportedly *not* having turkey at a 2014 Holiday meal** n=159
	Respondents Reporting in %		
Male	47.8	47.5	50
Education			
Did not graduate from high school	1	1	2
Graduated from high school, Did not attend college	20	20	21
Attended College, No Degree Earned	28	27	31
Attended College, Associates or Trade Degree	15	15	13
Attended College, Bachelor's Degree Earned	24	24	24
Graduate or Adv. Degree (M.S., PhD., Law)	11	11	9
Other	1	2	0
Annual Household Pretax Income			
Less than $20,000	19	17	26
$20,000 - $39,999	31	33	26
$40,000 - $59,999	19	18	21
$60,000-$79,999	13	14	9
$80,000-$99,999	8	8	9
$100,000-$119,999	3	3	4
$120,000 or more	7	7	5
Region of Residence			
Northeast	17	18	13
South	37	36	38
Midwest	24	24	24
West	22	22	25
Serving Turkey at any Holiday Meal in 2014	74	100	0

Generally speaking, the mean level of responses was lower for the health consciousness statements than in the holiday health intention statements (Table 2). For reference, lower number responses on the five point scale were indicative of higher levels of agreement that the statement described the respondent. In terms of the health consciousness statements, the highest levels of agreement were for *I'm usually aware of my health* and *I notice how I feel physically as I go through the day* whereas relatively higher means were observed for the statement, *I'm constantly examining my health.* Perhaps of more interest for the present study are responses to holiday health intentions, which reveal the highest levels of agreement for *I will make a New Year's*

Resolution to lose weight. Likewise, respondents who indicated having turkey for at least one holiday meal had statistically lower mean scores, indicating more agreement, than respondents not having turkey for seven of the nine health consciousness statements. For two of the three holiday behavior statements turkey consumers had statistically significant and lower scores than non-turkey consumers. Thus, holiday turkey consumers appear to be more health conscious in general, and during the holiday season, than non-turkey consumers during the holidays.

Table 2. Mean of health consciousness and holiday health intentions responses[1]

Health Consciousness[2]	**Mean of All Respondents** n=620	**Mean of Holiday Turkey Consumers** n=461	**Mean of Non-Holiday Turkey Consumers** n=159[3]
I reflect about my health a lot.	2.62	2.57[a]	2.77[b]
I'm very self-conscious about my health.	2.70	2.63[a]	2.87[b]
I'm generally attentive to my inner feelings about my health.	2.52	2.47[a]	2.67[b]
I'm constantly examining my health.	2.90	2.85[a]	3.03[a]
I'm alert to changes in my health.	2.34	2.26[a]	2.58[b]
I'm usually aware of my health.	2.19	2.12[a]	2.38[b]
I'm aware of the state of my health as I go through the day.	2.41	2.35[a]	2.59[b]
I notice how I feel physically as I go through the day.	2.21	2.18[a]	2.31[a]
I'm very involved in my health.	2.39	2.31[a]	2.64[b]
Holiday Health Intentions			
I will make a New Year's Resolution to lose weight.	3.61	3.54[a]	3.83[b]
I will be vigilant about my weight during the holiday season.	3.12	3.03[a]	3.38[b]
I watch what I eat during the holiday season.	3.18	3.14[a]	3.31[a]

Note. [1]Both the holiday health intentions (8 in total) and the health consciousness statements (9 in total) asked respondents to select an option from a 5 point scale, specifically "Please indicate how well the statements describe you"; the options consisted of: 1 – It describes you very well, 2 – It describes you fairly well, 3 – It describes you fifty-fifty, 4 – It describes you a little, 5 – This statement does not describe you at all.
[2]The health consciousness statements were taken from Gould (1988).
[3]Superscripts with differing letters indicate statistically significant differences in the mean value at the 0.10 level. Thus, superscripts not differing between turkey consumers and non-turkey consumers indicates mean values did not differ significantly at the 0.10 level.

Out of the 620 respondents, a total of 461 respondents indicated they were planning to consume turkey over the holiday season in 2014. Those 461 respondents who indicated they would consume turkey participated in the best-worst scaling question to elicit relative preferences for the six turkey attributes. Table 3 (see Appendix) displays the LCM and RPL parameter estimates. The LCM model is useful in determining "consumer segments" which can be particularly insightful when evaluating a retail product. With respect to the LCM results, a model with four classes was

found to be best suited to this application.[3] Several candidate covariates were analyzed to determine whether any were useful when characterizing class membership. Those covariates were the mean of the holiday health intention statements for each respondent, age, gender being female, and income. Only the mean of the health intentions statements showed significant differences across classes. Class 1, labeled the "bargain hunters" class, contained 33.3% of respondents with price being the most important attribute accounting for 55% of the preference share. The second most important attribute was weight which accounted for 25% of the preference share followed by brand with 13% of preference share. Thus, 93% of preference share was devoted to price, weight and brand with only 7% of the preference share devoted to attributes that could be considered animal welfare or socially responsible production attributes. Class 2, dubbed the "price conscious" class, contained 29.1% of respondents and the most important attribute was also price which accounted for 61% of preference share. For these respondents, brand was the least important attribute with only 4% of the preference share. Respondents in this class did not appear to be brand loyal. Class 3, the "I want it all" class, contained 19.2% of respondents and the most important attribute was brand with 20% of the preference share and the least important was price with 13% of the preference share. Class 4, labeled the "no antibiotics" class, contained 18.4% of respondents and the most important attribute was antibiotic free with 67% of preference share. For this class, the remaining attributes accounted for 9% or less of preference share each. However, the "no antibiotics" class did not place a high value on other attributes, such as pasture access or locally produced, presumed to be seen as more socially responsible or animal welfare friendly by consumers. Looking across classes, price was the most important attribute for respondents in classes 1 and 2. Thus, price was the most important attribute for a total of 62% of respondents.

While in the LCM model heterogeneity is discrete, thereby aiding in the development of "consumer segments", the RPL model allows for continuous heterogeneity and facilitates the estimation of individual-specific preference shares. Considering the RPL results, respondents overall rated price more important in selecting a turkey than all other options with a preference share of about 41%. The second most important attribute in holiday turkey selection, with a preference share of approximately 22% was the weight of the turkey. Thus, the top two attributes of those analyzed, summing to a total of 63% of the preference shares were the price and overall size, or weight, of the turkey. Amongst the remaining four attributes studied, antibiotic free and brand were each about 11% of the share of preference, and, the smallest two shares of preference were for the attribute for local production (approximately 8%) and pasture raised turkey (approximately 7%).

In addition to the relative ranking and size of preference shares, the relationships between the sizes of preference shares were investigated by examining the correlations (and associated significance) between preference shares for turkey using individual-specific parameter estimates from the RPL model. The size of the preference share for price was negatively correlated to the size of the preference shares for all other attributes investigated. Preference share for weight was negatively correlated with the size of the preference share for price and antibiotic free, but positively correlated with the size of share for brand. Perhaps the size of the preference shares

[3] The Bayesian Information Criterion (BIC) is frequently used to evaluate the fit of LCM models (Boxall and Adamowicz 2002; Wolf and Tonsor 2013). The BIC indicated a five class model was the best fit. However, the five class model yielded a class with a small membership (approaching 10 %) and provided little improvement in the BIC when compared to the four class model.

for antibiotic free and pasture access were positively correlated. Additionally, the size of the preference shares for local production, turkeys raised with pasture access, and brand were all positively correlated with each other. The relationships between the sizes of preference shares are insightful to help determine which attributes tended to increase or decrease as other attribute shares were altered. However, additional insight is possible by looking at correlations between the size of preference shares and other demographic, holiday planning, or health-related factors.

Relationships between the size of the shares of preference for turkey attributes and demographics were also investigated using correlations. Reporting an older age was positively correlated with the size of the preference share for price, but negatively correlated with preference for the turkey attributes of local, pasture access, and brand. Only one significant correlation between gender and preference shares was found. Being female was positively correlated to preference for antibiotic free production. With respect to income, many significant relationships were found. Having high household income, defined as household incomes reported over $80,000 annually, was negatively correlated to the size of the preference share for price. This was likely a reflection of less relative importance being placed on price when purchasing holiday turkeys by those individuals with higher incomes. In addition, income was positively correlated with the preference shares for brand, pasture access, and locally raised.

Linking responses about health to preferences for turkey attributes enables additional insight into how responses about health or holiday health-related intentions may relate to the relative value of importance they place on turkey attributes. Table 4 displays correlations between holiday health intentions and health consciousness statements and the size of the individual-specific preference shares for the six turkey attributes investigated. The relative importance placed on turkey price was significantly and negatively correlated with the level of agreement with each of the nine statements about health consciousness. That is, the more health conscious the respondent, the lower the relative importance placed on price when selecting a holiday turkey. In contrast, higher shares of preference for antibiotic free production, pasture access, and turkey brand were correlated with higher levels of agreement with the health consciousness statements. In other words, the larger the size of the preference share devoted to antibiotic free production, pasture, and brand the more agreement with the health consciousness statements. As might be expected, the share of preference devoted to turkey weight was negatively correlated with the level of agreement with the statement *I'm very self-conscious about my health* which indicates that those who preferred a heavier turkey tended to be less health conscious. One potential explanation for why only one health consciousness statement was significantly correlated with the preference share for turkey weight is that an individual shops for a holiday turkey that will likely be serving many people. Thus, respondents were making choices not reflective of only their own health consciousness, but also a number of family members or guests. Perhaps the complexity of planning, shopping for, cooking, and serving a holiday meal (or a meal for a large group) overshadowed individual personal values (including health consciousness). It is interesting to observe that within this sample, those consuming turkeys had higher mean levels of health consciousness than non-turkey consumers (Table 2). Thus, respondents represented (n=461) in the maximum difference analysis devoted to turkey attributes were already more health conscious.

Table 4. Correlations between value attributes and self-reported health awareness and holiday health intentions (n=461)

	Price	Weight	Antibiotic Free	Local	Pasture	Brand
I reflect about my health a lot.	-0.2685*	-0.0841	0.2741*	0.0543	0.2314*	0.1869*
I'm very self-conscious about my health.	-0.2268*	-0.1160*	0.2426*	0.0792	0.1812*	0.1936*
I'm generally attentive to my inner feelings about my health.	-0.2274*	-0.0430	0.2240*	0.0752	0.1561*	0.1184*
I'm constantly examining my health.	-0.2290*	-0.0206	0.1704*	0.1073*	0.2134*	0.1513*
I'm alert to changes in my health.	-0.1205*	-0.0137	0.1190*	0.0209	0.0886*	0.0617
I'm usually aware of my health.	-0.2090*	0.0063	0.2038*	0.0239	0.1442*	0.0714
I'm aware of the state of my health as I go through the day.	-0.2211*	-0.0288	0.1909*	0.1102*	0.1602*	0.1136*
I notice how I feel physically as I go through the day.	-0.2150*	0.0085	0.1764*	0.0826	0.1441*	0.1044*
I'm very involved in my health.	-0.2282*	-0.0066	0.1903*	0.0502	0.1990*	0.1443*
Correlations between value attributes and self-reported holiday health intentions						
I will make a NYR to lose weight.	-0.1007*	0.0467	0.0002	0.0376	0.1473*	0.1539*
I will be vigilant about my weight gain during the holiday season.	-0.2303*	0.0445	0.1154*	0.1159*	0.2264*	0.1683*
I watch what I eat during the holiday season.	-0.2120*	0.0131	0.0995*	0.0866*	0.2658*	0.21457*

Note. *Denotes statistical significance at the 5% level or less.
In order to facilitate interpretation of Table 4, the scale of agreement/disagreement was transformed to agreement at "1" to disagreement at "5". Thus a higher number response is indicative of increasing agreement with each statement. Interpretation of agreement with each statement relative to the preference share devoted to each attribute survey is more intuitive than the scale provided to survey respondents. This transformation does not alter the direction or magnitude of the relationships.

Also of note is that a higher share of turkey price preference was negatively correlated with agreeing with the three holiday health intentions shown. Thus, those individuals who intended to make healthier decisions during the holidays tended to have lower preference shares devoted to price. On the other hand, the level of agreement with the holiday health intentions as the preference shares devoted to antibiotic free, pasture, and brand had a positive relationship. This can be interpreted as those individuals who reportedly intended to be healthier during the holiday season had higher preference shares devoted those attributes. It is probable that some consumers link healthiness to turkey attributes, such as antibiotic free and pasture access. A potential explanation for the relationship between brand and health consciousness is that consumers gain trust in brands that they perceive are safe, wholesome, and thus healthy.

Conclusions and Implications

This analysis presented US consumers who planned on serving turkey during the holiday season with a maximum difference choice experiment aimed at determining the relative importance of six holiday turkey attributes. Of the six turkey attributes included, weight and price accounted for nearly two-thirds of the preference share in the RPL model. Turkey producers and retailers in the United States are frequently offering price-based specials and deals and are aware of the consumers' focus on price when shopping for holiday turkeys. While price is prioritized by a majority of consumers, there may be opportunities for adding value for segments of consumers who are shopping for other turkey attributes.

When the LCM was examined, price was the most important attribute for a total of 62% of respondents. Conducted at the beginning of the holiday season, this study also explored the importance of turkey attributes with self-reported health consciousness and holiday specific health outcomes/intentions. Health consciousness was negatively related to the preference share devoted to price and positively related to the preference shares devoted to antibiotic free production, pasture access, and brand. Although previous research indicated the holiday season consumption patterns should be studied separately from food consumption and purchasing patterns at other times of the year, the current study shows that even during the holiday season, consumers are still concerned about their health. Thus, while quantity and mix of foods may change during the holiday season, consumers are likely still making decisions based on the relative importance they place on food attributes. In this case, health conscious consumers had higher preference shares for attributes such as antibiotic free, pasture, and brand when surveyed about consuming turkey during a holiday meal. Retailers, marketers, and turkey producers alike may consider segmenting the market while taking into account this relationship between health consciousness and holiday food shopping.

The holidays are a special time of year for both consumers and retailers. Future studies might examine the potential to identify consumer segments based on those that cook from scratch, purchase items partially or fully prepared, or purchase a ready-made meal. Identifying these consumer types would further assist retailers in designing holiday promotions to meet the demands of the food-focused consumers, especially those concerned about their health.

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Table 3. RPL and LCM results and derived preference shares

	RPL			LCM							
				Coefficients				Share of Preference			
Turkey Attributes	Coefficient	Standard Deviation	Shares of Preferences	Class 1	Class 2	Class 3	Class 4	Class 1 "Bargain Hunters"	Class 2 "Price Conscious"	Class 3 "I Want It All"	Class 4 "No Antibiotics"
Price	1.2875*	2.1011*	0.4126	1.4022*	2.6288*	-0.4241*	0.1101				
	(.09396)	(.11305)		(.1138)	(.1932)	(.1264)	(.1288)	55%	61%	13%	7%
Weight	.6386*	1.1569*	0.2157	0.6192*	1.0508*	-0.1035	0.0427				
	(.06551)	(.06910)		(.0954)	(.1095)	(.1168)	(.1537)	25%	12%	18%	6%
Antibiotic Free	-.01606	1.9529*	0.1121	-2.3009*	0.9717*	-0.2059	2.4433*				
	(.09293)	(.09380)		(.1425)	(.1223)	(.1208)	(.2667)	1%	12%	16%	67%
Local	-.3397*	1.2272*	0.0811	-1.3284*	0.3540*	-0.0765	-0.1247				
	(.06427)	(.07731)		(.1407)	(.1246)	(.1045)	(.1063)	4%	6%	19%	5%
Pasture	-.5660*	1.2829*	0.0647	-2.0896*	0.0920	-0.3831*	0.4792*				
	(.06244)	(.07670)		(.1447)	(.0898)	(.1115)	(.1121)	2%	5%	14%	9%
Brand	0.000		0.1139	0.000	0.000	0.000	0.000	13%	4%	20%	6%
Constant				-.4193	.1997	1.611*					
				(.5999)	(.60172)	(.6068)					
Mean of Holiday Health Intentions				.2992	.0795	-.5427*					
				(.1597)	(.1720)	(.1856)					
Class Probability				.333	.291	.192	.184				

Note. * denotes statistical significance at the 5% level or less