Final Report

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Analyzing Consumers' Value of "Product of USA" Labeling Claims

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Executive Summary

The U.S. Department of Agriculture, Food Safety and Inspection Service (USDA, FSIS) is conducting a comprehensive review of the current voluntary "Product of USA" labeling claim to better understand how consumers understand the "Product of USA" labeling claim as it relates to the origin of FSIS-regulated products. As part of this review, FSIS contracted with RTI International to conduct a nationally representative consumer web-based survey/experiment for "Product of USA" labeling on meat (beef and pork) products (4,834 survey respondents) in July–August 2022. The survey population consisted of adults who do at least half of the grocery shopping for their household and have purchased beef or pork products within the past 6 months (referred to as eligible consumers).

The web-based survey/experiment addressed three primary research questions:

1. Do consumers notice the "Product of USA" labeling claim?
2. Do consumers understand the current "Product of USA" definition and other "USDA" labeling (e.g., USDA Choice) as it relates to country of origin?
3. How much are consumers willing to pay for meat products bearing the "Product of USA" labeling claim for the current definition and potential revised definitions (e.g., if the meat were from an animal that was born, raised, slaughtered, and processed in the United States)?

The key findings from the study are summarized below.

ES.1 Do Consumers Notice the "Product of USA" Labeling Claim?

Respondents were briefly shown a mock meat product and asked to recall what was on the package (unaided recall) and then directly asked whether they remembered seeing the "Product of USA" claim (cued recognition). Respondents were randomly assigned to view one of four mock meat products that varied based on the "Product of USA" claim format given the variability of how the voluntary claim is formatted in the marketplace: no claim (control), U.S. flag icon and claim text, claim text with border, and plain-text claim (i.e., no special formatting) included in a list of other claims.

- For unaided recall, saliency varied depending on the claim format. Saliency was highest for the "Product of USA" claim when formatted with a U.S. flag icon. About 1 in 3 eligible consumers reported seeing this version of the claim. Saliency was lowest for the plain-text claim included in a list of other claims: about 1 in 10 eligible consumers reported seeing this version of the claim.
- For cued recognition, saliency did not vary by claim format. About 70% to 80% of eligible consumers said they saw the "Product of USA" claim for the three treatment conditions. For the control condition, 15% reported seeing the claim even though it was not present on the package, thus illustrating the "noise" that can be present when respondents are asked to perform cued recognition tasks.

Based on these results, consumers do notice the "Product of USA" claim. Noticeability of the "Product of USA" claim varied depending on whether the respondent was prompted (i.e., unaided recall vs. cued recognition). Noticeability was also a function of how the claim was formatted: the highest saliency was observed for a stand-alone claim formatted with a flag icon.

ES.2 Do Consumers Understand the Current "Product of USA" Definition and Other "USDA" Labeling (e.g., USDA Choice) as It Relates to Country of Origin?

Respondents were asked to select the meaning of the "Product of USA" labeling claim from a list of response options that varied in terms of which production steps took place in the United States (born, raised, slaughtered, processed). Additionally, respondents were asked to select the meaning for USDA Choice and the round USDA mark of inspection from a list of response options.

- About 16% of eligible consumers identified the correct definition for the "Product of USA" claim (i.e., the product must be processed in the United States; the animals can be born, raised, and slaughtered in another country), 63% provided an incorrect response (most believed all production steps must take place in the United States), and 21% said they did not know.
- About 68% of eligible consumers correctly identified USDA Choice as being an indicator of quality; however, 18% had the misperception that it meant the beef is a product of the United States.
- About 83% of eligible consumers correctly identified the USDA mark of inspection as meat being produced under federal inspection of the USDA; 11% had the misperception that it meant the meat is a product of the United States.

Based on these results, eligible consumers have limited understanding of the current meaning of the "Product of USA" labeling claim. The majority of eligible consumers correctly understand USDA Choice and the USDA mark of inspection, and few have the misperception that this labeling indicates the meat is a product of the United States.

ES.3 How Much Are Consumers Willing to Pay for Meat Products Bearing the "Product of USA" Labeling Claim for the Current Definition and Potential Revised Definitions?

We estimated willingness to pay (WTP) using a discrete choice experiment (DCE) for two different approaches: (1) WTP for products labeled "Product of USA" with no definition provided and (2) WTP for different definitions of "Product of USA" that varied based on which production steps take place in the United States. We estimated WTP for three different meat products: ground beef, NY strip steak, and pork tenderloin (respondents were randomly assigned to one meat product). A direct question after the DCE asked about the frequency of looking for the "Product of USA" claim when buying the product.

- As shown in **Table ES.1**, consumers are willing to pay more for meat products bearing the "Product of USA" claim versus products without this claim (when no definition was provided). Likewise, consumers are willing to pay more for meat products when all production steps (born, raised, slaughtered, processed) take place in the United States versus when only processing takes place in the United States.

Table ES.1. Results for the WTP Analysis for the "Product of USA" Labeling Claim[a]

	"Product of USA" Claim vs. No Claim (No Definition Provided for the Claim)		All Production Steps (Born, Raised, Slaughtered, Processed) Take Place in the United States vs. Only Processed in the United States	
Product	**Increased WTP ($)**	**Percentage Increase Over Mean Price[b]**	**Increased WTP ($)**	**Percentage Increase Over Mean Price[b]**
1-lb ground beef	$1.69	35%	$1.15	24%
1-lb NY strip steak	$3.21	32%	$3.67	37%
1-lb pork tenderloin	$1.71	43%	$1.65	41%

[a] The WTP results for the two sets of results should not be compared directly because we used two different approaches to estimate WTP.

[b] Mean prices used in DCE: $4.79 per lb for ground beef, $9.99 per lb for NY strip steak, and $3.99 per lb for pork tenderloin. Mean prices were calculated using price data from the 3 months leading up to the survey launch (March, April, and May 2022) collected from USDA's national weekly retail activity report (USDA, n.d.).

- Analyses that explored whether WTP varied by lower versus higher household income revealed no differences in WTP by income level.
- The percentage of eligible consumers who reported they always or most of the time look for the "Product of USA" claim when buying meat products ranged from 43% (ground beef) to 48% (NY strip steak).

Based on these results, eligible consumers are willing to pay more for meat products with the "Product of USA" labeling claim (no definition provided for the claim). Likewise, eligible consumers are willing to pay more for meat products when more production steps take place in the United States.

1. Introduction

The U.S. Department of Agriculture, Food Safety and Inspection Service (USDA, FSIS) is conducting a comprehensive review of the current voluntary "Product of USA" labeling claim to better understand how consumers understand the "Product of USA" labeling claim as it relates to the origin of FSIS-regulated products. As part of this review, FSIS contracted with RTI International to conduct a nationally representative consumer web-based survey/experiment for "Product of USA" labeling on meat (beef and pork) products.[1] This report describes the study method and presents the results of the web-based survey/experiment. The remainder of this section provides background on the need to conduct the study, the study objectives and overview, and the organization of the report.

1.1 Background

USDA, FSIS protects the public by verifying that meat and poultry products are safe, wholesome, unadulterated, and properly labeled and packaged. The *FSIS Food Standards and Labeling Policy Book* (the "Policy Book") provides guidance to help meat and poultry product manufacturers prepare product labels that are truthful and not misleading. The "Policy Book" states that labeling may bear the phrase "Product of USA" under one of the following conditions:

- if the country to which the product is exported requires this phrase, and the product is processed in the United States or
- if the product is processed in the United States (i.e., is of domestic origin)[2].

Accordingly, the "Product of USA" labeling claim may be applied to meat or poultry products derived from animals that have been imported from a foreign country but fed and/or slaughtered in the United States, as well as to meat or poultry products that have been imported from a foreign country and repackaged or otherwise further processed in the United States.

Since 2018, USDA has received three petitions from industry associations regarding the origin of meat products bearing the "Product of USA" labeling claim, requesting that USDA revise the meaning of the claim. Additionally, in August 2021, bills were introduced in the House of Representatives and the Senate requiring that the "Product of USA" labeling claim be limited to beef products derived from cattle born, raised, and slaughtered in the United States. To better understand how consumers understand the "Product of USA" labeling

[1] Although the current guidance applies to all meat and poultry products, the focus of the petitions and the proposed legislation is on the labeling of meat (beef and pork) products.

[2] Domestic origin includes products imported to the United States that are repackaged or otherwise reprocessed in an FSIS-inspected facility; they are currently deemed and treated as domestic product for labeling purposes.

claim as it relates to the origin of FSIS-regulated products, FSIS intends to initiate rulemaking after conducting a comprehensive review of the current voluntary "Product of USA" labeling claim.

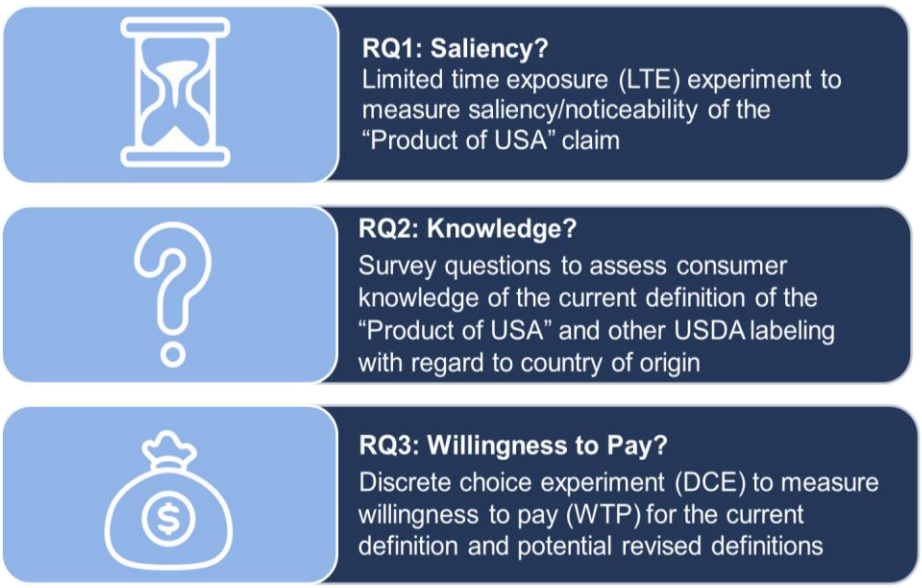
1.2 Study Objectives and Overview

The web-based survey/experiment addressed three primary research questions:

1. Do consumers notice the "Product of USA" labeling claim?
2. Do consumers understand the current "Product of USA" definition and other "USDA" labeling (e.g., USDA Choice) as it relates to country of origin?
3. How much are consumers willing to pay for meat products bearing the "Product of USA" labeling claim for the current definition and potential revised definitions (e.g., if the meat were from an animal that was born, raised, slaughtered, and processed in the United States)?

As shown in **Figure 1.1**, the three research questions are aligned with the three main components of the web-based survey/experiment.

Figure 1.1. Research Questions and Components for the Web-Based/Survey Experiment



1.3 Organization of the Report

Section 2 describes the research design, data collection procedures, and analysis approach for the web-based survey/experiment; Section 3 presents the results of the analysis; and Section 4 concludes the report with a discussion of the findings.

2. Methods

This section describes the study design for each of the three components—saliency, knowledge, and willingness to pay—of the web-based survey/experiment. We then discuss instrument development, the sampling procedures, the survey administration procedures, and the data analysis procedures. The study was approved by the Office of Management and Budget (OMB control No. 0583-0186, expiration date 06/30/2025) and received an exempt determination (i.e., the study does not require ongoing review) from RTI's Institutional Review Board.

2.1 Study Design

For the first component of the web-based survey/experiment, respondents completed a limited time exposure (LTE) task to determine whether consumers noticed the "Product of USA" labeling claim (i.e., to indicate saliency). Respondents were randomly assigned to view one of four mock products that varied in terms of whether the "Product of USA" claim was present and, if present, the location and format of the "Product of USA" claim. Respondents were exposed to the mock product for a limited time (20 seconds). Respondents were asked to list what labeling features they recalled (unaided) and then asked to answer a series of aided recognition questions to indicate whether they saw specific images and phrases (including the "Product of USA" claim). Given the location and format of the labeling claim, we analyzed the responses to determine respondents' saliency, or degree of attention to the "Product of USA" labeling claim.

For the second component, respondents answered survey questions to address (1) their understanding of the current "Product of USA" labeling claim as it relates to product country of origin (e.g., born, raised, slaughtered, processed) and (2) their understanding of the meaning of other "USDA" labeling such as USDA Choice or the round USDA mark of inspection, as related to product country of origin.

For the third component, respondents completed a discrete choice experiment (DCE) to measure their intrinsic value (willingness to pay [WTP]) for products bearing the "Product of USA" labeling claim for the current definition and potential revised definitions (e.g., the meat is from an animal that was both slaughtered and processed in the United States). Respondents completed a series of choice questions in which they were asked to choose between two hypothetical products, for example, two ground beef products that differed based on the following attributes: price ($/lb), definition for "Product of USA" labeling claim, and the presence or absence of other labeling claims (e.g., diet). We analyzed responses to estimate respondents' WTP for the current definition and potential revised definitions.

Appendix A provides the survey instrument for the web-based survey/experiment. We provide a more detailed description of each component below.

2.1.1 LTE Experiment for Measuring Saliency

We used methods from signal detection theory to measure saliency—the ability of a stimulus to attract attention in a complex field—for the "Product of USA" labeling claim on meat products. Signal detection is a branch of psychophysiology that examines the ability of a subject to discriminate visual or auditory stimuli that contain information (i.e., signal) from stimuli that do not contain information (i.e., noise) (MacMillan, 2002). The methodology typically involves exposing subjects to a stimulus and asking them to recall whether specific items were present. Subjects are typically exposed to the stimuli for a limited amount of time; thus, the approach is called LTE. For this study, we exposed respondents to one of four randomly assigned mock packages for a meat product (ground beef) for 20 seconds and then asked them to answer a series of questions. We selected ground beef as the mock meat product because it is often purchased by consumers of meat. The experiment had four conditions. Three of the packages (treatment conditions) bore the "Product of USA" labeling claim (the packages were the same with the exception of the format of the "Product of USA" labeling claim), and one package resembled the other three packages except for not having the claim (i.e., the control condition).

FSIS does not regulate the format or location of the "Product of USA" labeling claim; thus, a wide variety of label formats can be seen in the marketplace. Although the labeling claim may be displayed on the back of the package, this study only examined saliency for the front of the package because the extent to which consumers may turn the package over to look at the back of the package is not known, and it would make the survey task too burdensome for respondents to consider the front and back of the package.

To determine the format (e.g., size, color, use of icon) and placement (e.g., top right corner) to use for the "Product of USA" claim on the three treatment conditions, FSIS randomly selected and reviewed a sample of 202 ground beef products bearing the "Product of USA" labeling claim from the Label Insight database (https://www.labelinsight.com/), a proprietary data source with product attribute meta data. First, FSIS coded the products to determine whether the "Product of USA" claim was on the front or back of the package and whether the packaging was tray/vacuum packed (the packaging format used for the LTE mock product) or a chub. Among the 202 products, 155 (83%) were packaged in a tray/vacuum packed. Among the 155 products packaged in a tray/vacuum packed, 99 had some type of the "Product of USA" claim on the front. About half of these claims (51%) had a similar version of "Product of USA"; additionally, there were some other popular versions of the claim such as "Born, raised, and harvested in the USA" (26%) and "100% American" (12%). FSIS further coded these 99 products for the following characteristics: placement of "Product of USA" claim (e.g., upper left, lower right), presence of flag or USA/state shape icon, use of contrast color for text/icon, size of text/icon relative to product name, use of special formatting (e.g., border), and whether text for the claim was stand-alone or included in a list of other claims. RTI analyzed the coded data to identify the three most

common formats of the "Product of USA" claim among the sampled products. Among the 99 products, 42% had a flag or a USA-/state-shaped icon accompanying the claim, 30% had the claim formatted in a border, and the remaining labels did not have either of these formats. The majority of claims (52%) were of medium size (refers to font size for text and any icons) relative to the product name as displayed on the product package, 29% were smaller, and 19% were larger. The placement of the claim on the product varied across all products and by how the claim was formatted. Based on the results of the analysis, we formatted the "Product of USA" labeling claim (i.e., treatment conditions) as described in **Table 2.1**.

Table 2.1. LTE Experimental Conditions

Control	Treatment 1—Flag	Treatment 2—Border	Treatment 3—Plain Text
No claim	Stand-alone claim is accompanied by U.S. flag icon, located in lower-left corner of package, medium sized relative to product name, and printed in contrasting color. 	Stand-alone claim is formatted within a border, located in upper-right corner of package, medium sized relative to product name, and printed in contrasting color. 	Claim is included in a list of other claims, located in center right of package, medium sized relative to product name, and printed in contrasting color. 

Eligible survey respondents were randomly assigned to one of the four conditions for the LTE experiment. Respondents received the following instructions: "For the next question, assume you are at the grocery store, butcher shop, or shopping online and you are going to buy a package of ground beef. On the next screen, we are going to show you a package of ground beef. You will see the package for about 20 seconds. Carefully review the information on the product package because we are going to ask you a few questions about what you saw."

Respondents first completed an unaided recall task (Question L6)[3]: "Please list everything you remember seeing on the food package. Please type each thing you remember seeing, such as words, pictures, and symbols, on a separate row. For pictures or symbols, please provide a description of what you saw."

[3] The question numbers correspond to the survey questions as presented in Appendix A.

Next, respondents completed a cued recognition task (Questions L7A through L14B). As described in Section 2.5.1, we used responses to the cued recognition task to calculate a *d'* score, which assessed the saliency of each of the four conditions (Bylinskii et al., 2017). This task comprised eight dichotomous yes/no questions (shown in a random order) in which respondents were asked whether they remembered seeing certain words, pictures, or symbols on the package: "Now we are going to ask you if you remember seeing different words, pictures, or symbols on the product package. Only click YES if you are sure you saw the word, picture, or symbol; otherwise, click NO." Four of the questions asked about items that were on the package (including the "Product of USA" claim for the three treatment conditions), and four of the questions asked about items not on the package (including the "Product of USA" claim for the control condition). For the three conditions with the "Product of USA" claim, we considered the question about whether they saw the claim on the package a hit if they answered "yes." For the control condition without the "Product of USA" claim, we considered the question on whether they saw the claim on the package a false alarm if they answered "yes." To practice the LTE task, respondents first completed an example task for a mock chicken tender product (unaided recall and four cued recognition questions) (Questions L1 through L5).

2.1.2 Survey Questions for Measuring Consumer Knowledge

Component 2 on consumer knowledge comprised four multiple-choice questions. The order of the four questions and the response options for each question were randomized.

To measure consumer knowledge of the current definition for the "Product of USA" labeling claim, a question asked respondents to choose the meaning of the claim from a list of response options (select one response) that varied in terms of the production stages taking place in the United States (i.e., born, raised, slaughtered, processed) and a "not sure/don't know" option (Question K1). A similar knowledge question for the "Natural" labeling claim was included as a distractor (i.e., a question not related to the purpose of the survey) (Question K2).

The questionnaire included two questions to measure whether respondents had the misperception that USDA Choice, a quality claim from the USDA Agricultural Marketing Service, and the round USDA mark of inspection indicate that the meat is a product of the United States. Each question asked respondents to select the meaning from a list of response options (select all that apply): one response option was the correct response, two were incorrect responses used as distractors, one response option was "the meat is a product of the USA," and one response option was "not sure/don't know" (Questions K3 and K4).

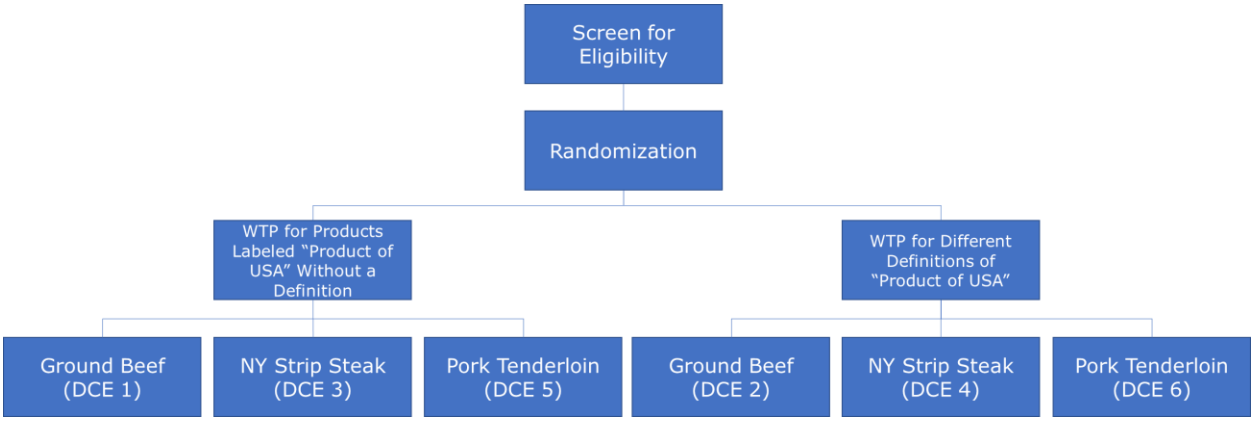
2.1.3 DCE for Measuring WTP

The goal of this component of the study was to estimate how much respondents were willing to pay for meat products bearing the "Product of USA" labeling claim. We developed six versions of the DCE to address the study's research questions. Each version differed based on two labeling claim conditions (whether "Product of USA" was defined) and three meat product conditions (ground beef, NY strip steak, and pork tenderloin). Eligible respondents were randomly assigned to one of the six DCE versions (see **Figure 2.1**).

Although the current "Product of USA" definition applies to all meat and poultry products, the study used beef and pork products because these products are most likely to be directly affected by changes to "Product of USA" labeling regulations. In addition, the study considered higher-cost beef products (i.e., steak) and lower-cost beef products (i.e., ground beef) because it seems possible that WTP for products produced in the United States may differ across these products.

As described in more detail below, the DCE asked respondents to complete a series of choice tasks where they had to choose between different hypothetical products that varied according to a set of attributes.

Figure 2.1. Respondent Assignment to DCE Version[a]



[a] Respondents who reported they do not purchase pork but were randomly assigned to complete a pork tenderloin DCE skipped the DCE part of the survey. For all other respondents, a question was asked after the DCE to determine whether the respondent had purchased the assigned product (i.e., ground beef, steak, or pork tenderloin) during the past 6 months. If the respondent indicated that they had not purchased the product, then their responses to the DCE were excluded from the analysis.

This study used six versions of a DCE experiment to estimate two different measures of how much respondents were willing to pay for products labeled "Product of USA": (1) an estimate of how much respondents were willing to pay for a meat product labeled "Product of USA" when provided no definition of the claim and (2) how much respondents were

willing to pay for meat products with differing definitions of "Product of USA." The two DCE approaches are described below:

- **WTP for products labeled "Product of USA" with no definition:** Three versions of the DCE (Versions 1, 3, and 5) presented the respondent with hypothetical products that might have included a "Product of USA" labeling claim with no detailed description of the meaning of the labeling claim to simulate the way most consumers likely engage with a "Product of USA" labeling claim. That is, when consumers are grocery shopping, they do not have access to educational material on the regulatory definition of "Product of USA."
- **WTP for different definitions of "Product of USA":** Three other versions of the DCE (Versions 2, 4, and 6) presented the respondent with hypothetical products that included a "Product of USA" labeling claim, but we provided the respondent with additional information on how this labeling claim was defined for each product (current definition and three potential revised definitions that varied based on the production stages that take place in the United States). The value of this approach is it allows FSIS to determine which definition of "Product of USA" provides the average consumer with the greatest value. We show the definitions for a single meat product, ground beef, below. We used similar definitions for steak and pork tenderloin by changing the type of meat and species as appropriate. Definition 1 is the current definition for "Product of USA."
    - **Definition 1 (Def 1):** The ground beef was **processed** in the United States, meaning it was packaged in the United States or ground and then packaged in the United States.
    - **Definition 2 (Def 2):** The ground beef was made from cattle that were **slaughtered** and the meat then processed all within the United States.
    - **Definition 3 (Def 3):** The ground beef was made from cattle that were **raised** and **slaughtered** and the meat then processed all within the United States.
    - **Definition 4 (Def 4):** The ground beef was made from cattle that were **born, raised, and slaughtered** and the meat then processed all within the United States.

To simplify presentation in the choice questions, we used the following nomenclature for the location produced attribute:

Def 1	Def 2	Def 3	Def 4
In the USA • Processed	In the USA • Slaughtered • Processed	In the USA • Raised • Slaughtered • Processed	In the USA • Born • Raised • Slaughtered • Processed

Attributes and Levels Used in DCE

We asked respondents 9 or 10[4] choice questions (in addition to a practice question) where they had to choose between different hypothetical products. These products were composed of a number of distinct characteristics, or "attributes." We held some of these attributes (i.e., fixed attributes) constant across different hypothetical products such as the type of meat product under consideration. However, we varied other attributes (i.e., randomized attributes) across questions to create two hypothetical meat products (e.g., two packages of ground beef) for each of the 9 or 10 choice tasks. Specifically, we included two types of randomized attributes in this study:

Price: We included this attribute in the DCE because it was required to estimate the marginal utility of income, which was needed to estimate WTP (as discussed in more detail below). We selected the levels used to describe this attribute for each meat product using the price data from the 3 months leading up to the survey launch (March, April, and May 2022) collected from USDA's national weekly retail activity report (USDA, n.d.). Each product had three levels: the lowest observed price/pound, the national weighted average price/pound, and the highest observed price/pound.

Labeling Claims: For the purposes of this study, the most important labeling claim to include on each meat product was the "Product of USA" labeling claim described above. However, for three reasons we included other labeling claims when describing the hypothetical meat products. First, we wanted to avoid single-cue bias, where a product's country of origin has a larger effect on a consumer's perceptions and choices when they are told nothing else about the product. This bias has been observed in multiple country-of-origin labeling studies (e.g., Peterson & Joilbert, 1995). The second reason to include other labeling claims on the hypothetical meat products was to measure how much consumers were willing to pay for products labeled as "Product of USA" relative to other attributes that consumers valued. This information helped provide context for the WTP results. Lastly, by including other labeling claims on the meat products, the choice tasks were more realistic because consumers would have to make trade-offs between these attributes when choosing meat products in the real world. Therefore, in addition to "Product of USA," the DCE included other labeling claims as product attributes that consumers might consider when purchasing meat. We chose the labeling claims by reviewing which labeling claims manufacturers frequently include on these types of meat products using the Label Insight database. Each of the labeling claim attributes had two levels: (1) present on the label (yes) or (2) not present on the label (no).

Table 2.2 presents the attributes and levels for ground beef and steak, and **Table 2.3** presents the attributes and levels for pork tenderloin.

[4] As described below, DCE Versions 1, 3, and 5 had 10 choice questions, and DCE Versions 2, 4, and 6 had 9 choice questions.

Table 2.2. Attribute Table for Ground Beef and Steak Versions of the DCE

Attribute	DCE 1	DCE 2	DCE 3	DCE 4
Product type	Ground beef (85% lean/15% fat)	Ground beef (85% lean/15% fat)	NY strip steak (Choice)	NY strip steak (Choice)
Price/pound	$3.89 $4.79 $5.69	$3.89 $4.79 $5.69	$8.09 $9.99 $12.19	$8.09 $9.99 $12.19
"Product of USA" or Location produced[a]	Yes No	Def 1 Def 2 Def 3 Def 4	Yes No	Def 1 Def 2 Def 3 Def 4
Grass fed	Yes No	Yes No	Yes No	Yes No
Free from antibiotics	Yes No	Yes No	Yes No	Yes No

[a] For DCE Versions 1 and 3, the attribute was labeled as "Product of USA," and for DCE Versions 2 and 4, the attribute was labeled as "Location produced."

Table 2.3. Attribute Table for Pork Tenderloin Versions of the DCE

Attribute	DCE 5	DCE 6
Product type	Pork tenderloin	Pork tenderloin
Price/pound	$2.89 $3.99 $5.19	$2.89 $3.99 $5.19
"Product of USA" or Location produced[a]	Yes No	Def 1 Def 2 Def 3 Def 4
Free from added hormones	Yes No	Yes No
Lean	Yes No	Yes No

[a] For DCE Version 5, the attribute was labeled as "Product of USA," and for DCE Version 6, the attribute was labeled as "Location produced."

By varying price and labeling claims according to an experimental design, one can see how a respondent's purchase decisions change when these attributes are changed. This variation can be used to quantify respondent preferences using statistical methods as described below.

The way we varied attribute levels into different combinations to create hypothetical products is called the experimental design. In most cases, the number of possible combinations is too large to ask respondents to evaluate all possibilities. However, if

participant preferences meet some very basic assumptions, robust statistical results can be obtained from a fractional factorial design implemented in far fewer tasks. Using Sawtooth Software, we created experimental designs for each of the six DCE versions with consideration for the following: (1) the levels of an attribute occurred with equal frequency so that each respondent saw most or all attribute levels, (2) the occurrences of any two levels of different attributes were uncorrelated, and (3) attribute levels that did not vary within a choice set were minimized. This approach was consistent with best practices for experimental design development in DCEs (Johnson et al., 2007; 2013).

DCE Questionnaire

At the beginning of the DCE portion of the survey, we presented respondents with a description of the hypothetical choice tasks we asked them to complete (customized to each of the six DCE versions). This description included details on the context of the hypothetical choice task (i.e., we asked them to imagine shopping for the product in a grocery store, at a butcher, or online). This description also included plain-language descriptions of all product attributes that were sufficient to provide respondents with a basic understanding of each attribute. The exception was that a definition was not provided for "Product of USA" for the DCE versions examining WTP for products labeled "Product of USA" (DCE Versions 1, 3, and 5).

Next, a series of statements instructed respondents to read the survey carefully and described the potential consequences of misleading survey results if respondents did not answer the choice questions truthfully. Specifically, the survey stated:

> "It is important that we get accurate results to this survey. In prior surveys, some respondents did not consider their answers to these questions carefully. For example, in one survey, most respondents said they would buy a new product. However, when a grocery store stocked the product, only about half actually bought the new product when they had to pay for it with their own money. This can lead to misleading survey results. So, it is important that you make each of your upcoming choices like you would if you were actually making these exact choices in a grocery store/butcher or online."

Statements like these, referred to as "cheap talk," are best practice in stated preference surveys and have been shown to reduce hypothetical bias in DCE responses (Tonsor et al., 2011).

After reading the cheap talk statement, we asked respondents to complete a simplified choice task where they had to choose between two meat products. The simplified choice task began with a verbal description of the attributes both products had in common:

> "To start, consider Product A and Product B. Please assume they are the brand that you usually buy. Both products are packages of USDA-inspected 85%

> lean/15% fat ground beef sold by the pound and have the same weight and expiration (sell-by) date. The products are the same except for the features shown on the next screen. Please carefully consider each product."

Next, we described the attributes that differed between the two meat products using text as shown below:

Product Features	Product A	Product B
Grass fed	No	No
Free from antibiotics	Yes	Yes
Product of USA	Yes	Yes
Price/pound	$3.89	$5.69

Given these two options, which package of ground beef would you buy?

1. Product A
2. Product B
3. Neither

This format for presenting different meat product attributes is similar to the format used in Loureiro and Umberger (2007). Note that in this first, simplified choice task we varied only the price attribute, and all other attributes were constant between Product A and Product B. This simplification not only made the first choice question easier to answer, but also implied that there was a "correct" answer. Under the usual assumptions of consumer rationality, a respondent should prefer the less expensive version of two identical products. If a respondent chose the more expensive product, we informed the respondent that the two products were identical other than price and encouraged them to read the survey carefully. The purpose of this question was to provide respondents with a warm-up question that could help them better understand the DCE. In addition, this warm-up question could help us identify whether a significant number of respondents had difficulties understanding the types of questions being asked. Demonstrating that most respondents understood simplified survey questions helps support the internal validity of the survey (Johnson et al., 2019). As part of our testing for internal validity, we analyzed the responses to the simplified choice task (called the dominate-option validation test) and conducted other internal validity tests, as described in Section 2.5.3.

After completing the first simplified choice task, we asked all respondents nine random choice questions where all attributes varied according to an experimental design (described above). For the DCE versions in which we asked respondents to choose between a "Product of USA" labeling claim with no detailed description of the meaning of the labeling claim (DCE Versions 1, 3, and 5), respondents completed an additional choice question, called a fixed choice question, in which all the attributes were the same except one product had the

"Product of USA" labeling claim and one did not have the claim. The responses to this question could be used to directly assess whether respondents preferred products labeled "Product of USA" when we held all other attributes of the product constant.

2.2 Instrument Development

RTI worked with the FSIS Technical Review Team to develop the survey instrument. The survey was available in English and Spanish[5] and was designed with an estimated participant burden of 20 minutes. RTI conducted virtual cognitive interviews in April 2022 using the programmed instrument with eight target audience members (including Spanish-speaking individuals) to determine if any of the questions or response items were confusing or difficult to understand. Based on the cognitive interview findings, RTI revised the programmed instrument to improve understanding and readability. The cognitive interviews also confirmed the estimated burden of 20 minutes. The survey instrument was at a 7.1-grade reading level as measured by the Flesch-Kincaid Grade Level Readability Test.

2.3 Sampling Procedures

To administer the web-based survey/experiment, RTI subcontracted with Ipsos's KnowledgePanel (https://www.ipsos.com/en-us/solutions/public-affairs/knowledgepanel), a probability-based panel of almost 60,000 members that is designed to be nationally representative of the U.S. adult population. This representation is achieved through address-based sampling, where every U.S. adult with an address (including those without a landline phone number) had an equal probability of being selected for participation on the panel. Ipsos provides selected panelists without Internet access with free Internet access and a tablet computer, if needed. The KnowledgePanel has some limitations that should be considered when interpreting survey results. The low recruitment rate for panel participation, panel attrition, and nonresponse among panelists selected to complete a particular survey may lead to a very low overall response rate (less than 10%), which may result in nonresponse bias if nonrespondents are systematically different from respondents (Tourangeau et al., 2013). Other potential limitations included sampling and coverage issues, nonresponse from breakoffs (i.e., not completing the survey), and measurement error (Tourangeau et al., 2013).

The sampling frame for the web-based survey/experiment was the U.S. general population of adults (18 years or older) who were members of the KnowledgePanel and spoke English or Spanish. Appendix B describes the recruitment procedures for the KnowledgePanel. The survey population is defined as adult consumers who do at least half of the grocery shopping in the household (referred to as primary grocery shoppers for brevity) and have purchased beef or pork within the past 6 months (Section 2.4 describes the eligibility

[5] For the Spanish version, the claims for the LTE were not translated into English to reflect what is typical for commercially available food products.

screening process). Through the application of survey weights when conducting the analysis, we can make inferences to the survey population, referred to as eligible consumers for brevity.

To select a general population sample from KnowledgePanel, Ipsos uses a patented methodology such that the sample behaves as an equal probability selection method (EPSEM) sample. Appendix C describes the sample selection procedures. To determine the number of panelists to sample, the target respondent size of 4,400 (with 300 Spanish-speaking individuals) was inflated by the expected cooperation, eligibility, and contact rates. Ipsos randomly selected and fielded 13,382 cases to achieve the target respondent size.

Although there was no explicit stratification for the survey, eligible respondents were randomized into 1 of 24 randomization groups that were created by cross-classifying the four treatment conditions for the LTE experiment and the six DCE versions (i.e., creating 24 unique combinations of four treatment conditions by six DCE versions). Using this approach, all six DCE groups were approximately equally represented in each of the four LTE groups, thus eliminating the possibility that the DCE groups were confounded with the LTE groups. As described in Section 3, we conducted an analysis post-data collection to confirm that the LTE group assignment did not adversely affect the DCE analysis.

2.4 Survey Administration Procedures

Following OMB approval, RTI worked with Ipsos to conduct a pilot study (n = 34) using the same sampling and survey procedures as the main study to ensure that the programming logic was correct before the full-scale study began. RTI analyzed the pilot data, including conducting the internal validity testing for the DCE. Based on the pilot, we removed a question from DCE Versions 2, 4, and 6 that was designed to assess respondents' understanding of the information provided on production location because it appeared that respondents were not interpreting the question as intended.

Ipsos then conducted a soft launch with panelists selected for the survey (n = 949) using the same procedures for the main survey.[6] RTI analyzed the soft launch data, including conducting the internal validity testing for the DCE and estimating the models for the DCE. Based on the analysis of the soft launch data for the DCE analysis, we added a question at the end of the DCE component to determine whether the respondent purchased the randomly assigned DCE product (ground beef, steak, or pork tenderloin) within the past 6 months so that respondents who did not purchase the product could be excluded from the DCE analysis given they may not eat the product and/or may not be familiar with it.

[6] The soft launch was supposed to be 600 cases (100 per DCE version); however, 949 respondents completed the survey before the soft launch was closed. All soft launch respondents were retained in the final analysis dataset and used for the LTE and knowledge analyses but excluded for the DCE analyses because whether the respondent had purchased the randomly assigned DCE product (ground beef, steak, or pork tenderloin) within the past 6 months was not known.

Additionally, we revised the programming logic so that respondents who indicated that they had not purchased pork within the past 6 months skipped the DCE if they were randomly assigned to a pork tenderloin DCE.[7] Data collection for the main survey (soft and hard launches) took place July 15 through August 13, 2022.

Ipsos sent the randomly selected panel members an email invitation to participate in the survey with a unique link to the survey. Selected participants could also log-on to their password-protected panel home page to access the survey. Once selected panelists clicked on the survey link, information on informed consent was provided. If panelists declined to participate, they were categorized as nonrespondents. If panelists continued, we asked them two questions to determine eligibility. To be eligible for the survey, panelists had to (1) do all, most, or about half of the grocery shopping in the household (Question S2) and (2) have purchased beef or pork within the past 6 months (Question S3). We classified panelists who were not eligible to complete the survey as ineligible. Eligible panelists were randomly assigned to 1 of 24 study conditions (4 LTE conditions x 6 DCE versions), as described above, and proceeded with the survey.

Ipsos sent email reminders to soft launch and hard launch nonresponders on Day 3 of the field period. Day 5 and Day 7 email reminders were also sent to all survey nonresponders for the hard launch, while an additional Day 10 email reminder was sent to Spanish-speaking survey nonresponders. Respondents received a $5 (equivalent) incentive for participating in the pilot or full study, which they could redeem for vouchers or gifts, checks, or raffle entries.

2.5 Data Analysis Procedures

This section describes the analysis procedures for each of the three components of the web-based survey/experiment. All analyses were calculated using the final survey weights. Appendix D describes Ipsos' statistical methodology weighting procedures, which appropriately adjust for coverage and nonresponse. For quality control, we used a dual-programming approach for all analyses in which two analysts independently programmed and conducted the analysis and then compared the results. Any discrepancies between the two sets of results were reviewed and corrected to ensure that estimates from both programs were reconciled.

2.5.1 LTE Experiment for Measuring Saliency

Analysis of Unaided Recall Question

The primary analysis for the research question about saliency investigated the comparison of four independent proportions of respondents who correctly recalled seeing the "Product of

[7] Based on a review of the responses to open-ended questions, we discovered that some respondents found it annoying when asked DCE questions about pork tenderloin when they had previously responded that they do not purchase pork.

USA" labeling claim on a mock package of ground beef when viewing the front of the package for a limited time. The four independent proportions were from three treatment conditions, each with a different format/placement for the "Product of USA" labeling claim, and a control condition, which did not have the "Product of USA" labeling claim (described in Section 2.1.1). We tested the following set of hypotheses:

- H_0 = The three LTE treatment condition proportions are the same as the control condition proportion.
- H_1 = At least one of the four LTE condition proportions is different from the other proportions.

To answer the saliency research question, we compared the proportions from the four independent samples estimated using the coded responses to the unaided recall task using a similar approach to the chi-squared test described in Fleiss, Levin, and Paik (2003, pp. 187–192). This comparison was implemented using SUDAAN (Research Triangle Institute, 2012) to account for the differential weighting (i.e., the sampling units could have different weights). We estimated two sets of proportions based on how unaided recall was defined:

- The ***more restrictive*** coding for unaided recall included only respondents who wrote a response that provided some indication of country of origin (e.g., flag, Product of US/USA, made in US/USA, produced in US/USA).
- The ***less restrictive*** coding for unaided recall also included respondents who wrote "US" or "USA" without also including text noting the country of origin; thus, the less restrictive estimate includes these respondents in case they were referring to the "Product of USA" labeling claim and not the USDA mark of inspection (which contains the word "U.S.").

We coded the open-ended responses to Question L6 to create separate dichotomous variables for the more restrictive and less restrictive recall definitions. For surveys completed in Spanish (n = 311), we used a team of two bilingual analysts to review and code the responses in which both coders independently coded the responses without conferring. We compared the coded values and reviewed and resolved the coded values that were not in agreement.

For surveys completed in English, we used a fuzzy text matching technique that searches for words or phrases that are similar to but may not be exact matches for the search terms. For example, if a word is off from the search term because of a minor misspelling or because it is plural and the search term is singular, fuzzy text matching programming techniques will still flag the word as a match. Using the soft launch data, we created a list of key terms for each version of the LTE (e.g., "Product of USA," flag, "Made in USA") and then used fuzzy text matching to identify when respondents entered a word or phrase similar to one of the key terms. We then checked a subsample of 10% of responses manually to ensure that the fuzzy text matching worked as expected. We added or modified key terms

as needed, reran the program, and checked a second subsample of 10% of responses, which yielded the final coded data.

Analysis of Aided Recognition Questions

Next, we assessed the saliency of each of the four conditions (three treatment and one control) based on the *d′* score (Bylinskii et al., 2017). The *d′* score was calculated from the responses to the set of eight dichotomous yes/no questions (Questions L7A through L14B). Four questions presented information that was on the mock package (including the "Product of USA" claim for the three treatment conditions); an affirmative (yes) response to each is referred to as a hit. Four additional questions presented information that was not on the mock package (including the "Product of USA" claim for the control condition); an affirmative (yes) response to each is referred to as a false alarm. The numbers of hits and false alarms were summed separately. We calculated each respondent's *d′* score using the following formula:

$$d' = H\text{-}score - F\text{-}score$$

where

H-score is the number of correct hits.

F-score is the number of false alarms.

Applying this formula results in a *d′* score with a range of −4 to +4. The condition with the highest *d′* score indicates that respondents were more likely to notice the "Product of USA" claim when it is formatted as shown on the mock package.

2.5.2 Survey Questions for Measuring Consumer Knowledge

The primary analysis for the second research question about consumer knowledge investigated the proportion of all respondents who correctly identified the current definition for the "Product of USA" labeling claim on meat products (Question K1). We estimated the proportion (excluding missing values) and the standard error of the proportion using SUDAAN (Research Triangle Institute, 2012) to account for the differential weighting. From this information, we constructed a 95% confidence interval (CI). The same approach was used to analyze the responses to the other knowledge questions (Questions K3 and K4).

2.5.3 DCE for Measuring WTP

Internal Validity Testing

Before conducting the DCE analysis, we performed a series of internal validity tests to assess the quality of data collected using the DCE questions. Internal validity tests check to see whether survey respondents were logical and consistent when answering DCE questions. Specifically, we conducted the following internal validity tests:

- **Dominant-option validation test:** As noted in Section 2.1.3, the first question in all six DCE versions was a choice question in which both meat products are identical except one is less expensive than the other. If a respondent understands the choice task, they should most likely prefer the less expensive product. The greater the number of respondents who choose the less expensive option, the more confidence one has that the majority of respondents understood the questions being asked and provided well-considered answers. We calculated how many respondents failed this internal validity test (i.e., chose the unambiguously worse option) and compared that number with other estimates in the literature.
- **Attribute dominance (noncompensatory preferences):** As Johnson et al. (2019) noted, choice experiments assume that respondents have compensatory preferences. This means that respondents should be willing to accept a reduction in one desirable attribute in return for a sufficiently large compensating increase in another desirable attribute. One can test whether respondents have noncompensatory preferences by looking at the respondent's answers to each DCE question and seeing whether they always chose the alternative with the better level of one attribute. We estimated the percentage of respondents who exhibited noncompensatory preferences in our sample and compared that percentage with other estimates in the literature.
- **Straight-lining:** Respondents answered a set of choice questions asking them to choose between two meat products (Product A and Product B). As Johnson et al. (2019) noted, the probability that the most preferred option will always appear in the same position (i.e., Product A is always the most preferred or Product B is always the most preferred) in this many pairwise comparisons is less than 1%. As a result, if a respondent always chooses Product A or Product B as the most preferred option, this is evidence that they are not answering the DCE questions carefully. This behavior is referred to as "straight-lining." We estimated the percentage of respondents who exhibited straight-lining behavior and compared that estimate with other estimates in the literature.

Hypothesis Testing

We used the data collected from the DCE component of the study to test two sets of hypotheses. The first set of hypotheses we tested related to how much consumers are willing to pay for meat products with a "Product of USA" labeling claim when no definition is provided. Specifically, we used data collected from DCE Versions 1, 3, and 5 to test the following sets of hypotheses (Hypothesis I):

- H_0 = The difference between the amount respondents are willing to pay for meat products bearing the "Product of USA" labeling claim versus no claim is not statistically different from 0.
- H_1 = The difference between the amount respondents are willing to pay for meat products bearing the "Product of USA" labeling claim versus no claim is statistically different from 0.

The second set of hypotheses we tested related to how much consumers are willing to pay based on where the stages of meat product production take place. Specifically, we used data collected from DCE Versions 2, 4, and 6 to test the following sets of hypotheses (Hypothesis II):

- H_0 = The difference between the amount respondents are willing to pay for meat products bearing different definitions of the "Product of USA" labeling claim is not statistically different from 0.
- H_1 = The difference between the amount respondents are willing to pay for meat products bearing more stringent definitions (i.e., more production stages take place in the United States) of the "Product of USA" labeling claim is statistically different from 0.

We tested these hypotheses by estimating a separate random utility model (RUM) for each DCE version. For each RUM model, we assumed that an individual will select the option that provides the highest level of utility. In this context, the choice is between three options: 1) hypothetical Product A, 2) hypothetical Product B, or 3) neither product. We defined the utility, u_j, that a person receives from option j by

$$\mathrm{u\,j} = \mathrm{v\,j} + \varepsilon\,\mathrm{j}, \mathrm{j} = 1, 2, \text{and } 3, \tag{2.1}$$

where v_j is the observable component of utility that depends on the option's attribute levels. The term ε_j is a random error representing the component of utility that is unobservable from the perspective of the analyst but known to the individual. This error term is assumed to be an independently and identically distributed extreme value.

Under the assumption of utility maximization, respondents will choose option j over option k in a given choice task if $u_j \geq u_k \; \forall k \neq j$. Because total utility is unobserved by the analyst, this choice is random from the perspective of the model, and we can only state the probability that option j will be chosen. In general terms, this probability is given by

$$\Pr(\mathrm{uj} > \mathrm{uk}) = \mathrm{pr}(\mathrm{vj} + \varepsilon\mathrm{j} > \mathrm{vk} + \varepsilon\mathrm{k}) = \mathrm{pr}(\varepsilon\mathrm{k} - \varepsilon\mathrm{j} < \mathrm{vj} - \mathrm{vk}). \tag{2.2}$$

Estimation of the model proceeds using assumptions for the observable component of the utility function. Our assumption of the form of the observable component of the utility function differed depending on the DCE version being considered. Specifically, the equation below captures the observable component of the utility function for DCE Versions 1, 3, and 5 (no "Product of USA" definition provided):

$$v_j = \alpha_1 Price_j + \alpha_2 PUSA_j + \sum_{i=3}^{5} \alpha_i X_{ij}\,, \tag{2.3}$$

where:

- $Price_i$ is a continuous variable for the price of meat product j.
- $PUSA_i$ is an effects-coded variable that equals 1 if the product is labeled "Product of USA" and equals −1 if not.
- X_{ji} represents dichotomous indicators for other meat product attributes (e.g., whether the product has a grass-fed claim).

Similarly, the equation below captures the observable component of the utility function for DCE Versions 2, 4, and 6 ("Product of USA" definitions provided):

$$v_j = \beta_1 Price_i + \beta_2 Def1_i + \beta_3 Def2_i + \beta_4 Def4_i + \sum_{j=5}^{7} \beta_j X_{ji} \quad (2.4)$$

where:

- *Price$_i$* is a continuous variable for the price of meat product *j*.
- *Def1, Def2, and Def4* are effects-coded variables for whether the product used definition 1, definition 2, or definition 4 to define the "Product of USA" labeling claim. One definition had to be excluded to allow the model to be estimated, so we chose Def3.
- *X$_{ji}$* represents dichotomous indicators for other meat product attributes (e.g., whether the product has a grass-fed claim).

The coefficients of equation 2.4 above were estimated using a mixed logit model. These coefficients were then used to estimate the marginal WTP. Specifically, WTP was computed as the ratio between the estimated change in utility from changing an attribute (e.g., adding "Product of USA" claim) and the marginal utility of income (obtained by taking the absolute value of the coefficient on the price attribute). For example, the WTP for adding a "Product of USA" claim to a meat product is calculated as follows:

$$WTP_{PUSA} = \frac{(\alpha_2 - (-\alpha_2))}{|\alpha_1|} \quad (2.5)$$

This estimate of the marginal WTP was used to test Hypothesis I. We used a Wald Test to see whether WTP is significantly different from 0 (Judge et al., 1985).

Similarly, we estimated how much more the average consumer is willing to pay for meat products bearing more stringent definitions (i.e., more production stages take place in the United States) than the current definition (processed in the USA) as follows:

$$WTP_{Def4} = \frac{(\beta_4 - (\beta_2))}{|\beta_1|} \quad (2.6)$$

$$WTP_{Def3} = \frac{((-(\beta_2+\beta_3+\beta_4)) - (\beta_2))}{|\beta_1|} \quad (2.7)$$

$$WTP_{Def2} = \frac{(\beta_3 - (\beta_2))}{|\beta_1|} \quad (2.8)$$

These estimates of the marginal WTP were used to formally test Hypothesis II and to assess whether respondents were willing to pay more for meat products bearing more stringent definitions (i.e., more production stages take place in the United States) of the "Product of USA" labeling claim. Specifically, we used a Wald Test to see whether each marginal WTP was significantly different from 0.

Analysis to Explore Whether WTP Varies by Household Income

We also explored whether consumers' preferences differed by household income. Specifically, we compared how much "higher- income" households and "lower-income" households were willing to pay for either the addition of a "Product of USA" claim or changes in the location of where each step of meat production takes place. We defined "lower-income" households as those earning below 2 times the poverty level. To classify each respondent into a higher- or lower-income category, we used the poverty-level threshold by household size from the Department of Health and Human Services. First, we calculated the higher-income threshold for each household size by multiplying the poverty-level threshold by 2. Next, we identified the Ipsos income category that is closest to the higher-income threshold (see **Table 2.4**). Respondents were then classified into higher- and lower-income categories based on their income and household size according to this threshold.

Table 2.4. Poverty Guidelines by Household Size

Household Size	Poverty-Level Threshold	Higher-Income Threshold	Ipsos Income Category Closest to Higher-Income Threshold
1	$13,590	$27,180	Less than $25,000
2	$18,310	$36,620	$25,000–$49,999
3	$23,030	$46,060	$25,000–$49,999
4	$27,750	$55,500	$50,000–$74,999
5	$32,470	$64,940	$50,000–$74,999
6	$37,190	$74,380	$50,000–$74,999
7	$41,910	$83,820	$75,000–$99,999
8	$46,630	$93,260	$75,000–$99,999

Source: Department of Health and Human Services. (2022, January 21). Annual update of the HHS poverty guidelines. Federal Register. https://www.federalregister.gov/documents/2022/01/21/2022-01166/annual-update-of-the-hhs-poverty-guidelines

To investigate how income influenced consumer preferences, we interacted a dummy variable for whether the household was lower income with the price and Product of USA–related variables in the observable utility functions specified above. Specifically, the observable component of the utility function for DCE Versions 1, 3, and 5 is captured by the equation below:

$$v_j = \gamma_1 Price_i + \gamma_2 Price_i x Low\_Income + \gamma_3 PUSA_i + \gamma_4 PUSA_i x Low\_Income + \sum_{j=5}^{7} \gamma_j X_{ji} + \varepsilon_i \quad (2.9)$$

where:

- $Price_i$ is a continuous variable for the price of meat product j.

- *PUSA$_i$* is an effects-coded variable that equals 1 if the product is labeled "Product of USA" and equals −1 if not.
- *Low_Income* is a dummy variable that equals 1 if the respondent lives in a lower-income household and equals 0 if not.
- X_{ji} represents dichotomous indicators for other meat product attributes (e.g., whether the product has a grass-fed claim).

Similarly, the observable component of the utility function for DCE Versions 2, 4, and 6 is captured by the equation below.

$$v_j = \delta_1 Price_i + \delta_2 Price_i x Low\_Income + \delta_3 Def1_i + \delta_4 Def2_i + \delta_5 Def4_i + \delta_6 Def1_i x Low\_Income + \delta_7 Def2_i x Low\_Income + \delta_8 Def4_i x Low\_Income + \sum_{j=9}^{11} \delta_j X_{ji} \quad (2.10)$$

where:

- *Price$_i$* is a continuous variable for the price of meat product *j*.
- *Def1, Def2, and Def4* are effects-coded variables for whether the product used definition 1, definition 2, or definition 4 to define the "Product of USA" labeling claim. One definition has to be excluded, so we chose Def3.
- *Low_Income* is a dummy variable that equals 1 if the respondent lives in a lower-income household and equals 0 if not.
- X_{ji} represents dichotomous indicators for other meat product attributes (e.g., whether the product has a grass-fed claim).

The coefficients of the equation above were estimated using a mixed logit model where sample weights were applied. These coefficients were then used to estimate the marginal WTP in the same manner as above. The only difference is that we used the interaction terms to estimate different WTPs by household income. For example, the WTP among higher-income consumers for adding a "Product of USA" claim to a meat product is calculated as follows:

$$WTP_{PUSA}^{High\_Income} = \frac{(\gamma_3 - (-\gamma_3))}{|\gamma_1|} \quad (2.11)$$

Similarly, the WTP among lower-income consumers for adding a "Product of USA" claim to a meat product is calculated as follows:

$$WTP_{PUSA}^{Low\_Income} = \frac{((\gamma_3+\gamma_4) - (-(\gamma_3+\gamma_4)))}{|\gamma_1+\gamma_2|} \quad (2.12)$$

We can compute the difference between these two WTP estimates as follows:

$$WTP_{PUSA}^{\text{Difference}} = \frac{((\gamma_3+\gamma_4) - (-(\gamma_3+\gamma_4)))}{|\gamma_1+\gamma_2|} - \frac{(\gamma_3 - (-\gamma_3))}{|\gamma_1|} \quad (2.13)$$

A Wald Test was then used to see whether the difference between each WTP was significantly different from 0.

Analysis to Explore Whether WTP Varies by Understanding of the "Product of USA" Labeling Claim

We also explored whether respondents who did not notice the presence of a "Product of USA" claim on a label in the unaided LTE task or did not correctly identify the current definition for the "Product of USA" claim have lower WTP for meat products featuring this labeling claim for DCE Versions 1, 3, and 5.[8]

To explore this question, we first created an indicator variable that equaled 1 if the respondent failed either the unaided recall question using the more restrictive coding (Section 2.5.1) or the knowledge question (Section 2.5.2) but equaled 0 otherwise.

Next, we interacted this dummy variable with the "Product of USA"–related variable in the model for Hypothesis I above. As a result, the observable component of the utility function for DCE Versions 1, 3, and 5 can be represented as follows:

$$v_j = \omega_1 Price_i + \omega_2 PUSA_i + \omega_3 PUSA_i x Failed\_Understanding_i + \sum_{j=4}^{k} \omega_j X_{ji} + \varepsilon_i \qquad (2.14)$$

The coefficients of the equation above were estimated using a mixed logit model where sample weights were applied. These coefficients were then used to estimate the marginal WTP in the same manner as above, using the interaction terms to estimate different WTPs by understanding. For example, the WTP to add a "Product of USA" claim to a meat product among consumers who demonstrated understanding is calculated as follows:

$$WTP_{PUSA}^{Understand} = \frac{(\omega_2 - (-\omega_2))}{|\omega_1|} \qquad (2.15)$$

Similarly, the WTP to add a "Product of USA" labeling claim to a meat product among consumers who failed to demonstrate understanding is calculated as follows:

$$WTP_{PUSA}^{Did\_Not\_Understand} = \frac{((\omega_2+\omega_3) - (-(\omega_2+\omega_3)))}{|\omega_1|} \qquad (2.16)$$

We can compute the difference between these two WTP estimates as follows:

$$WTP_{PUSA}^{\text{Difference}} = \frac{((\omega_2+\omega_3) - (-(\omega_2+\omega_3)))}{|\omega_1|} - \frac{(\omega_2 - (-\omega_2))}{|\omega_1|} \qquad (2.17)$$

A Wald Test was then used to see whether the difference between each WTP was significantly different from 0.

[8] This analysis is not applicable for DCE Versions 2, 4, and 6 because it did not explicitly include the "Product of USA" claim as an attribute (examined production location instead).

DCE Descriptive Questions

For the descriptive questions that follow the DCE, we calculated 1) the percentage of respondents who reported which attribute was most important in their purchasing decision when completing the choice questions and 2) the percentage of respondents who look at each labeling claim when buying the meat product. Missing values were excluded from the calculations. We estimated the proportion and the standard error of the proportion using SUDAAN (Research Triangle Institute, 2012) to account for the differential weighting.

3. Results

This section summarizes the survey response and survey population sample characteristics and presents the results of the LTE experiment, the analysis of the knowledge questions, and the results of the WTP analysis and the descriptive questions.

3.1 Survey Response and Survey Population Characteristics

The total number of completed surveys was 4,834 (949 soft launch cases and 3,885 cases). The median completion time was 19.6 minutes. The 4,834 total cases excluded 17 cases that were dropped during data cleaning beyond completion of the two screening questions. These cases fell into at least one of the following categories:

- Speeders—Those who completed the survey in less than one-quarter of the median response time
- Constant refusers—Those who refused half or more of the questions they were shown
- Refused to answer key analytical questions:
  - LTE experiment: Questions L7A or L7 (unaided question about "Product of USA" labeling shown on mock product)
  - Knowledge: Question K1 (meaning of "Product of USA" labeling claim)
  - DCE: All of the choice questions

The unweighted completion rate for the survey was 53.5%, which is defined as the percentage of sampled panelists who answered the screening questions (7,165/13,382). The unweighted qualification rate was 67.5%, which is defined as the percentage of cases that completed the screening questions and were eligible and completed the survey (4,834/7,165). There were 680 cases that entered the survey and did not complete the survey, including 473 cases that qualified for but did not finish the survey. The completion rates and qualification rates are in alignment with similar 20-minute general population surveys administered using the KnowledgePanel.

Table 3.1 provides information on the demographic and other characteristics of the survey population, that is, adult primary grocery shoppers who have purchased beef or pork within the past 6 months. For brevity, we refer to the survey population as eligible consumers when reporting the results. Demographic information was available from the KnowledgePanel Profile Data, so it was not necessary to collect this information in the survey.

Table 3.1. Characteristics of the Survey Population of Eligible Consumers

Characteristic	Levels	Unweighted Sample Size	Weighted Percentage (95% CI)
Age (years)	18–24	154	6.1 (5.2–7.1)
	25–34	567	16.6 (15.4–17.9)
	35–44	766	19.4 (18.2–20.7)
	45–54	735	15.8 (14.8–16.9)
	55–64	1,070	19.1 (18.0–20.3)
	65–74	1,034	15.4 (14.5–16.3)
	75+	508	7.5 (6.9–8.2)
Education	No high school diploma or GED	304	8.8 (7.9–9.9)
	High school graduate (high school diploma or the equivalent GED)	1,171	27.1 (25.8–28.6)
	Some college or associate's degree	1,386	28.3 (26.9–29.7)
	Bachelor's degree	1,121	20.7 (19.5–21.9)
	Master's degree or higher	852	15.0 (14.0–16.1)
Gender	Male	2,018	41.4 (39.9–42.9)
	Female	2,816	58.6 (57.1–60.1)
Household income	Less than $10,000	155	3.8 (3.2–4.5)
	$10,000–$24,999	458	9.7 (8.9–10.7)
	$25,000–$49,000	857	17.7 (16.5–18.9)
	$50,000–$74,999	801	16.3 (15.2–17.5)
	$75,000–$99,999	693	13.5 (12.5–14.5)
	$100,000–$149,000	863	17.2 (16.1–18.4)
	$150,000 or more	1,007	21.7 (20.5–23.0)
Household size	1 person	963	17.8 (16.7–18.9)
	2 people	2,010	37.8 (36.3–39.3)
	3 people	792	17.8 (16.6–19.0)
	4 people	618	15.2 (10.0–16.4)
	5 people	278	7.0 (6.2–7.9)
	6 people	98	2.6 (2.1–3.2)
	7 people	41	1.0 (0.7–1.4)
	8 people	21	0.6 (0.4–0.9)
	9 people	7	0.2 (0.1–0.4)
	10 people	6	0.1 (0.1–0.3)

(continued)

Table 3.1. Characteristics of the Survey Population of Eligible Consumers (continued)

Characteristic	Levels	Unweighted Sample Size	Weighted Percentage (95% CI)
Metropolitan Statistical Area status	Nonmetro	639	13.7 (12.7–14.8)
	Metro (as defined by U.S. OMB Core–Based Statistical Area)	4,195	86.3 (85.2–87.3)
Race/ethnicity	White, non-Hispanic	3,387	63.9 (62.3–65.4)
	Black, non-Hispanic	448	11.5 (10.5–12.6)
	Other, non-Hispanic	195	6.2 (5.4–7.2)
	Hispanic	677	17.0 (15.8–18.3)
	Two or more races, non-Hispanic	127	1.3 (1.1–1.6)
U.S. Census region	Northeast	844	16.8 (15.7–17.9)
	Midwest	1,016	20.3 (19.1–21.6)
	South	1,753	38.2 (36.7–39.8)
	West	1,221	24.7 (23.4–26.0)
Survey language	English	4,523	93.9 (93.2–94.6)
	Spanish	311	6.1 (5.4–6.8)

Source: KnowledgePanel Profile Data, August 2022. Total number of respondents = 4,834.

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights.

Table 3.2 compares the weighted estimates for the survey population of eligible consumers to 2021 Census data. For age, education, and race/ethnicity, the estimates are generally similar. For age, the percentage of eligible consumers for the 75+ years age category is slightly lower compared with Census data (7.5% vs. 11.7%). For income, the percentage of eligible consumers who live in households with incomes $75,000 or greater is slightly higher compared with Census data (52.4% vs. 46.4%). For household size, the percentage of eligible consumers who live in single-person households is lower compared with Census data (17.8% vs. 28.5%).

Table 3.2. Comparison of Survey Population of Eligible Consumers to Census Data

Characteristic	Levels	Weighted Percentage for Survey Population of Eligible Consumers[a]	Census Data[b]
Age (years)	18–24	6.1	4.2
	25–34	16.6	15.9
	35–44	19.4	17.0
	45–54	15.8	16.7
	55–64	19.1	18.7
	65–74	15.4	15.8
	75+	7.5	11.7
Education	No high school diploma or GED	8.8	9.4
	High school graduate (high school diploma or the equivalent GED)	27.1	28.2
	Some college or associate's degree	28.3	26.5
	Bachelor's degree	20.7	22.6
	Master's degree or higher	15.0	13.3
Gender[c]	Male	41.4	42.0
	Female	58.6	58.0
Household income	Less than $10,000	3.8	5.3
	$10,000–$24,999	9.7	12.1
	$25,000–$49,000	17.7	18.8
	$50,000–$74,999	16.3	16.2
	$75,000–$99,999	13.5	11.9
	$100,000–$149,000	17.2	15.9
	$150,000 or more	21.7	19.9
Household size	1 person	17.8	28.5
	2 people	37.8	35.0
	3 people	17.8	15.0
	4 people	15.2	12.4
	5 people	7.0	5.8
	6 people	2.6	2.0
	7 people	1.0	1.2[d]
	8 people	0.6	—

(continued)

Table 3.2. Comparison of Survey Population of Eligible Consumers to Census Data (continued)

Characteristic	Levels	Weighted Percentage for Survey Population of Eligible Consumers[a]	Census Data[b]
	9 people	0.2	—
	10 people	0.1	—
Race/ethnicity[d]	White, non-Hispanic	63.9	65.7
	Black, non-Hispanic	11.5	13.4
	Other, non-Hispanic	6.2	5.4
	Hispanic	17.0	14.1
	Two or more races, non-Hispanic	1.3	1.4

[a] Source: KnowledgePanel Profile Data, August 2022. Total number of respondents = 4,834. Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights.

[b] Sources: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement, 2021, available at Historical Households Tables (census.gov), U.S. Census Bureau, Current Population Survey, Educational Attainment in the United States, 2021, available at Educational Attainment in the United States: 2021 (census.gov), and U.S. Census Bureau, Current Population Survey Tables for Household Income, 2021, available at Current Population Survey Tables for Household Income (census.gov).

[c] The gender of the head of household is not identified for married households in the U.S. Census Bureau's data; thus, the percentage of female- and male-headed households only represents single-headed households.

[d] The U.S. Census Bureau only reports family size up to "seven or more" people.

[e] The U.S. Census Bureau reports on the following race categories: White, alone, non-Hispanic households; Black alone households; Asian alone households; and Hispanic households (persons of Hispanic origin may be of any race). For comparison purposes, we equated "White, alone, non-Hispanic households" to be the same as our race category of "White, non-Hispanic." We did the same for "Black alone households" and "Black, non-Hispanic," "Asian alone households" and "other, non-Hispanic," and "Hispanic households" and "Hispanic." These categories sum to 98.6% for the U.S. Census Bureau's data, so we assumed that the other 1.4% of households are mixed race and would be similar to our "two or more races, non-Hispanic" race category. The data source is the U.S. Census Bureau's Table HH-7. Households by Race and Hispanic origin of the Household Reference Person and Detailed Type.

3.2 Results for the LTE Experiment

Table 3.3 reports the results for the analysis of the unaided recall question. With the more restrictive coding (respondents had to write a response that provided some indication of country of origin, for example, made in US/USA, product of US/USA, flag), unaided recall for the "Product of USA" claim ranged from 9% to 25% depending on the format of the claim. The recall rates for the three treatment conditions were significantly higher compared with

the control and were significantly different from each other: the highest rate was for the flag icon (C2), and the lowest rate was for plain text included in a list of other claims (C4).

With the less restrictive coding (i.e., respondents wrote a response that provided some indication of country of origin or only US/USA), unaided recall for the "Product of USA" claim ranged from 14% to 31% depending on the format of the claim. Again, the recall rates for the three treatment conditions were significantly higher compared with the control and were significantly different from each other; the highest rate was for the flag icon (C2), and the lowest rate was for plain text (C4).

Table 3.3 Results for Analysis of Unaided Recall Question

	Condition 1: Control—No "Product of USA" Claim[a] (*n* = 1,187)	**Condition 2: Stand-alone "Product of USA" Claim With Flag Icon (*n* = 1,232)** 	**Condition 3: Stand-alone "Product of USA" Claim Within Border (*n* = 1,206)** 	**Condition 4: Plain Text for "Product of USA" Claim Included in List of Other Claims (*n* = 1,209)** 
More restrictive[b]				
Unweighted sample size	0	308	197	110
Weighted percentage who recalled "Product of USA" claim (95% CI)	0.0	24.9[c] (22.3–27.6)	16.6[c] (14.5–19.0)	9.2[c] (7.6–11.1)
Less restrictive[d]				
Unweighted sample size	20	385	270	167
Weighted percentage who recalled "Product of USA" claim (95% CI)	1.6[c] (1.0–2.7)	31.2[c] (28.4–34.1)	22.8[c] (20.3–25.4)	14.2[c] (12.2–16.5)

Source: "Product of USA" Web-Based Survey/Experiment, August 2022. Number of respondents = 4,384.

[a] Condition 1 (control) did not include the "Product of USA" claim, so these participants reported seeing the claim even though it was not present on the label (i.e., a false alarm).

[b] The more restrictive coding for unaided recall included only respondents who wrote a response that provided some indication of country of origin (e.g., flag, product of US/USA, made in US/USA, produced in US/USA).

[c] Conditions 1, 2, 3, and 4 are all statistically different from each other.

[d] The less restrictive coding for unaided recall also included respondents who wrote "US" or "USA" without including text noting the country of origin; thus, this is a less restrictive estimate that includes these respondents in case they were referring to the "Product of USA" labeling claim and not the USDA mark of inspection (which contains the word "U.S.").

Table 3.3 Results for Analysis of Unaided Recall Question (continued)

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights. Pairwise significance testing was conducted for the four conditions (e.g., 1 vs. 2, 1 vs. 3, 1 vs. 4, 2 vs. 3, 2 vs. 4, and 3 vs. 4), and comparisons that were significant are noted with footnotes. Holm-Bonferroni was used to control the family-wise error rate with significance level 0.05.

Table 3.4 reports the results for the analysis of the aided recognition questions, including the weighted responses to the eight dichotomous questions and the mean *d'* score.

When shown the "Product of USA" claim and directly asked whether they remembered seeing it, the percentage of eligible consumers who reported remembering the claim varied from 70% to 80% depending on the format of the claim (Conditions 2 through 4). For Condition 1, 15% of eligible consumers reported seeing the phrase "Product of USA" even though it was not present on the mock package, thus illustrating the "noise" that can be present when respondents are asked to perform cued recognition tasks.

We used the responses to the eight recognition questions to calculate a *d'* score for each respondent and then estimated the mean *d'* score by condition. Condition 1 (control) is statistically different from the three treatment conditions; however, the three treatment conditions are not statistically different from each other. These findings suggest greater saliency for the three treatment conditions relative to the control.

Table 3.4. Results for Analysis of Aided Recognition Questions

Item		Condition 1: Control—No "Product of USA" Claim[a] (*n* = 1,187)	Condition 2: Stand-alone "Product of USA" Claim With Flag Icon (*n* = 1,232) 	Condition 3: Stand-alone "Product of USA" Claim Within Border (*n* = 1,206) 	Condition 4: Plain Text for "Product of USA" Claim Included in List of Other Claims (*n* = 1,209) 
"Product of USA" claim (hit for C2–C4, false alarm for C1)	Unweighted sample size	168	906	930	831
	Weighted percentage (95% CI)	14.6 (12.5–17.0)	73.6 (70.8–76.2)	79.5 (77.0–81.8)	70.1 (67.3–72.8)
No antibiotics and no added hormones claim (hit)	Unweighted sample size	664	676	689	685
	Weighted percentage (95% CI)	55.5 (52.4–58.6)	54.1 (51–57.1)	58.2 (55.2–61.2)	57.2 (54.1–60.1)

(continued)

Table 3.4. Results for Analysis of Aided Recognition Questions (continued)

Item		Condition 1: Control—No "Product of USA" Claim[a] (*n* = 1,187)	Condition 2: Stand-alone "Product of USA" Claim With Flag Icon (*n* = 1,232) 	Condition 3: Stand-alone "Product of USA" Claim Within Border (*n* = 1,206) 	Condition 4: Plain Text for "Product of USA" Claim Included in List of Other Claims (*n* = 1,209) 
 (hit)	Unweighted sample size	852	899	846	885
	Weighted percentage (95% CI)	72.6 (69.8–75.2)	73.1 (70.4–75.7)	71.4 (68.6–74.0)	73.7 (71.0–76.3)
100% grass fed claim (hit)	Unweighted sample size	760	789	791	828
	Weighted percentage (95% CI)	62.7 (59.7–65.7)	63.2 (60.2–66.1)	64.6 (61.6–67.4)	68.7 (65.8–71.4)
Sustainably raised claim (false alarm)	Unweighted sample size	137	140	149	166
	Weighted percentage (95% CI)	12.9 (10.9–15.2)	11.6 (9.8–13.7)	12.6 (10.7–14.8)	14.1 (12.1–16.4)
Eco friendly claim (false alarm)	Unweighted sample size	94	95	78	95
	Weighted percentage (95% CI)	9.5 (7.7–11.7)	7.5 (6.1–9.3)	7.0 (5.5–8.8)	8.1 (6.6–10.0)
 (false alarm)	Unweighted sample size	322	358	396	348
	Weighted percentage (95% CI)	28.4 (25.6–31.3)	29.2 (26.5–32.1)	33.2 (30.3–36.1)	29.4 (26.7–32.2)
 (false alarm for C1)[b]	Unweighted sample size	600	0	0	0
	Weighted percentage (95% CI)	51.0 (47.9–54.1)	—	—	—

(continued)

Table 3.4. Results for Analysis of Aided Recognition Questions (continued)

Item		Condition 1: Control—No "Product of USA" Claim[a] (*n* = 1,187)	Condition 2: Stand-alone "Product of USA" Claim With Flag Icon (*n* = 1,232) 	Condition 3: Stand-alone "Product of USA" Claim Within Border (*n* = 1,206) 	Condition 4: Plain Text for "Product of USA" Claim Included in List of Other Claims (*n* = 1,209) 
 (false alarm for C2–C4)[b]	Unweighted sample size	0	119	154	113
	Weighted percentage (95% CI)	—	9.7 (8.0–11.6)	13.3 (11.3–15.5)	9.8 (8.1–11.8)
Mean *d'* score		1.77[c] (1.69–1.85)	2.07 (1.99–2.15)	2.10 (2.01–2.18)	2.08 (2.00–2.17)

Source: "Product of USA" Web-Based Survey/Experiment, August 2022. Number of respondents = 4,834.

[a] Condition 1 (control) did not include the "Product of USA" claim, so these participants reported seeing the claim even though it was not present on the label (i.e., false alarm).

[b] Respondents assigned to Condition 1 (control, no claim) were asked whether they remember seeing the farm icon (a hit) because the question asking them to recall the "Product of USA" claim is a false alarm. Respondents assigned to Conditions 2 through 4 were asked whether they remember seeing the certified humane claim (false alarm) because the question asking them to recall the "Product of USA" claim is a false alarm. This approach helps to ensure a balanced number of hits and false alarms for each condition.

[c] Condition 1 is statistically different from Conditions 2, 3, and 4. Conditions 2, 3, and 4 are not statistically different from each other.

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights. For the mean *d'* score, pairwise significance testing was conducted for the four conditions (e.g., 1 vs. 2, 1 vs. 3, 1 vs. 4, 2 vs. 3, 2 vs. 4, and 3 vs. 4), and comparisons that were significant are noted with footnotes. Holm-Bonferroni was used to control the family-wise error rate with significance level 0.05.

3.3 Results for the Consumer Knowledge Questions

To address the second research question, we asked respondents a series of questions to measure consumer knowledge of "Product of USA" labeling and other USDA labeling. As shown in **Table 3.5**, 16% of eligible consumers identified the correct definition for the "Product of USA" labeling claim, 63% provided an incorrect response, and 21% said they did not know the meaning of the claim. Regarding consumer knowledge of other USDA labeling, many eligible consumers (68%) correctly identified USDA Choice as being an indicator of quality; however, 18% had the misperception that it meant the beef is a product of the United States. Most eligible consumers (83%) correctly identified the USDA mark of inspection as meat being produced under federal inspection of the USDA; 11% had the misperception that it meant the meat is a product of the United States.

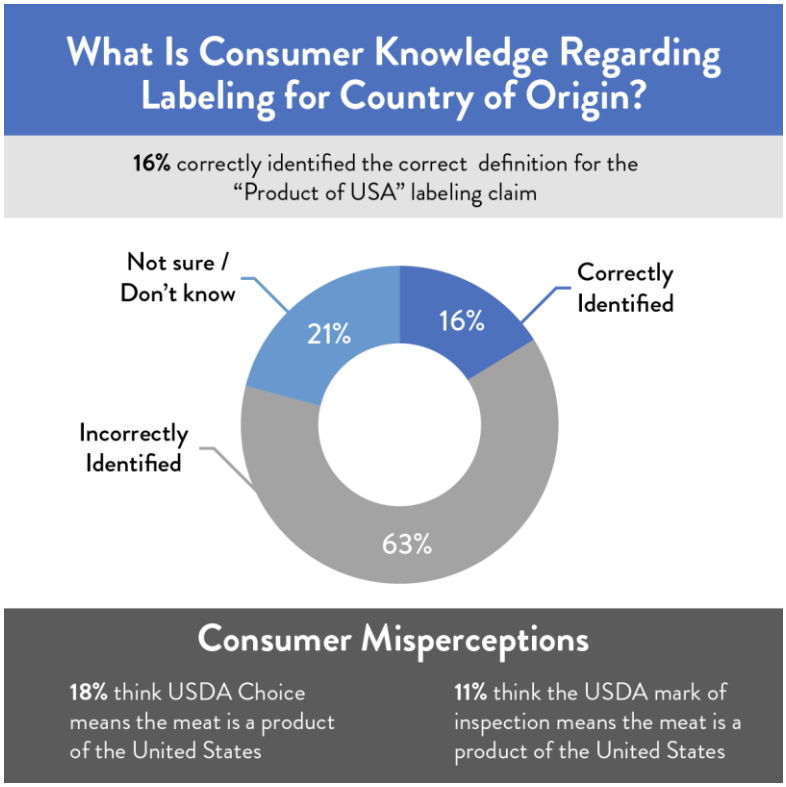


Table 3.5. Results for Consumer Knowledge Questions

Question	Response	Unweighted Sample Size	Weighted Percentage (95% CI)
To your knowledge, what does the **"Product of USA"** labeling claim on meat products mean?	The product must be made from animals born, raised, and slaughtered and the meat then processed in the USA.[a]	2,241	46.6 (45.1–48.1)
	The product must be made from animals raised and slaughtered and the meat then processed in the USA; the animals can be born in another country.	423	8.7 (7.8–9.6)
	The product must be made from animals slaughtered and the meat then processed in the USA; the animals can be born and raised in another country.	353	7.6 (6.8–8.4)

(continued)

Table 3.5. Results for Consumer Knowledge Questions (continued)

Question	Response	Unweighted Sample Size	Weighted Percentage (95% CI)
	The product must be processed in the USA; the animals can be born, raised, and slaughtered in another country.	820	16.1 (15.1–17.3)
	Not sure/don't know	997	21.1 (19.8–22.3)
To your knowledge, what does the **natural** labeling claim on meat products mean?	The product must be made from meat with no added colors or artificial ingredients and made in a way that does not change the meat itself (i.e., minimally processed).	2,289	46.5 (45.0–48.1)
	The animals used to make the product were never given antibiotics throughout their lifetimes.	340	7.5 (6.7–8.4)
	The animals used to make the product were never given synthetic or artificial hormones throughout their lifetimes.	1,019	22.0 (20.7–23.3)
	Not sure/don't know	1,169	23.6 (22.3–24.9)
To your knowledge, what does **USDA Choice** on beef products mean?[b]	The beef was evaluated (graded) and is considered high-quality beef for tenderness, juiciness, and flavor.	3,451	67.9 (66.4–69.4)
	The cows used to produce the beef were treated humanely from birth to slaughter on farms that provide suitable living conditions that meet the animals' needs.	291	6.8 (6.0–7.6)
	The beef does not contain any bacteria (e.g., *Salmonella*) that can cause foodborne illness.	363	7.7 (6.9–8.6)
	The beef is a product of the USA.	840	18.1 (16.9–19.3)
	Not sure/don't know	710	16.6 (15.5–17.9)
To your knowledge, what does this symbol on meat products mean?[b] 	The meat was produced under federal inspection of the U.S. Department of Agriculture (USDA).	4,073	82.7 (81.4–83.8)
	The animals used to produce the meat were treated humanely from birth to slaughter on farms that provide suitable living conditions that meet the animals' needs.	234	5.4 (4.8–6.2)
	The meat does not contain any bacteria (e.g., *Salmonella*) that can cause foodborne illness.	611	13.1 (12.1–14.2)

(continued)

Table 3.5. Results for Consumer Knowledge Questions (continued)

Question	Response	Unweighted Sample Size	Weighted Percentage (95% CI)
	The meat is a product of the USA.	506	10.6 (9.7–11.6)
	Not sure/don't know	384	8.8 (7.9–9.8)

Source: "Product of USA" Web-Based Survey/Experiment, August 2022. Number of respondents = 4,834. The number of missing values = 17.

[a] Processed in the USA was defined as the meat was packaged in the USA or cut/ground (for example, into pork chops or hamburger) and then packaged in the USA.

[b] Respondents could select multiple responses, so the total may sum to more than 100%.

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights. The correct response is highlighted with blue shading.

3.4 Results for the DCE and Descriptive Questions

3.4.1 Internal Validity Testing

The economic theory underlying discrete choice analysis assumes consumers make choices rationally, weigh each attribute when making their decision, and answer each question carefully. **Table 3.6** presents the results of the internal validity testing we conducted to ensure this was true of our survey respondents. Specifically, we conducted three internal validity tests and compared our results to a review of 55 health-related DCEs conducted by Johnson et al. (2019).

Table 3.6. Internal Validity Test Results by DCE Version: Unweighted Failure Rates (%)

		"Product of USA" vs. No "Product of USA			Four Definitions of "Product of USA"		
	Expected Failure Range[a]	DCE 1 Ground Beef (*n* = 522)	DCE 3 NY Strip Steak (*n* = 507)	DCE 5 Pork Tender-loin (*n* = 370)	DCE 2 Ground Beef (*n* = 527)	DCE 4 NY Strip Steak (*n* = 477)	DCE 6 Pork Tender-loin (*n* = 330)
Dominant-option validation test	3%–27%	3.8%	3.8%	3.0%	4.7%	4.8%	1.8%
Attribute dominance (noncompensa-tory preferences)	11%–35%	34.5%	35.1%	28.9%	32.5%	29.8%	24.9%
Straight-lining	2%–8%	1.5%	2.6%	1.1%	0.8%	2.9%	0.9%

Source: "Product of USA" Web-Based Survey/Experiment, August 2022.

[a] Interquartile range of failure rates reported in Johnson et al. (2019).

First, the dominant-option validation test examines the percentage of respondents who selected the more expensive product when choosing between two otherwise identical products. If respondents are making a rational choice, we would expect them to choose the less expensive product. Johnson et al. (2019) found that across 21 health-related DCEs that included a dominant-option validation test the interquartile range of the failure rate (i.e., the middle 50% of failure rates of these studies) for this test ranged from 3% to 27% (i.e., 3% to 27% of respondents in each survey chose the unambiguously worse option). Our results fall on the lower end of this interquartile range. Specifically, the unweighted failure rate for the dominant-option validation test varied across DCE versions from 1.8% for DCE 6 to 4.8% for DCE 4.

The attribute dominance (noncompensatory preferences) test examines respondents' answers to each DCE question to determine whether they always chose the alternative with the better level of one attribute. If respondents weighed each attribute carefully, we would not expect them to solely focus on a single attribute. Johnson et al. (2019) found that across 55 health-related DCEs the interquartile range of the failure rate for this test ranged from 11% to 35%. Our results fall within this interquartile range. Specifically, the unweighted failure rate for the attribute dominance test varied across DCE versions from 24.9% for DCE 6 to 35.1% for DCE 3.

The straight-lining test examines the percentage of respondents who always chose either Product A or Product B for all of the choice questions. If respondents made each choice carefully, it would be unlikely that the product they preferred in each question was always Product A or Product B. Johnson et al. (2019) found that across 55 health-related DCEs the interquartile range of the failure rate for this test ranged from 2% to 8%. Our results fall within this interquartile range. Specifically, the unweighted failure rate for the straight-lining test varied across DCE versions from 0.8% for DCE 2 to 2.9% for DCE 4.

Across all three internal validity tests, our results conformed with what one would expect based on other DCEs. Given these results, we can be relatively confident that most respondents understood the questions being asked and provided well-considered answers.

3.4.2 Hypothesis Test Results

Appendix E provides the coefficients from the mixed logit models used to test Hypothesis I for "Product of USA" labeling with a definition (DCEs 1, 3, and 5) and Hypothesis II for "Product of USA" labeling with four different definitions (DCEs 2, 4, and 6). Because models were estimated for each DCE version separately, the coefficients in these tables cannot be compared directly across experiments, but the qualitative rankings of the attribute levels can be compared. As previously discussed, these coefficients can be viewed as part-worth utilities where large values indicate greater utility.

When considering results, we see that, on average, eligible consumers preferred the following levels for each attribute:

- Price: The average eligible consumer across all experiments preferred low prices to high prices.
- "Product of USA" claim (DCEs 1, 3, and 5): The average eligible consumer preferred products with a "Product of USA" claim to products without this claim.
- Location of production (DCEs 2, 4, and 6): The average eligible consumer preferred meat products for which more production steps took place in the United States. For example, the average eligible consumer preferred meat products labeled born, raised, slaughtered, and processed in USA to meat products labeled raised, slaughtered, and processed in USA.

Ground beef and steak (DCEs 1, 2, 3, and 4):

- Free from antibiotics claim: The average eligible consumer preferred products with a free from antibiotics claim to products without this claim.
- Grass-fed claim: The average eligible consumer preferred products with a grass-fed claim to products without this claim.

Pork tenderloin (DCEs 5 and 6):

- Free from added hormones claim: The average eligible consumer preferred products with a free from added hormones claim to products without this claim.
- Lean claim: The average eligible consumer preferred products with a lean claim to products without this claim.

The coefficients from the mixed logit models were used to calculate how much the average eligible consumer was willing to pay for changes in each of the four meat product attributes. These marginal WTP results are reported in **Tables 3.7** through **3.9**. In discussing these results, we focus on the attributes that are directly relevant for testing Hypotheses I and II. Specifically, the marginal WTP that is relevant for Hypothesis I is how much consumers are willing to pay for meat products with a "Product of USA" claim versus those without a "Product of USA" claim. The marginal WTP that is relevant for Hypothesis II is how much consumers are willing to pay based on where the meat product was produced.

Table 3.7 reports the marginal WTP results for the two ground beef experiments. The average eligible consumer was willing to pay $1.70 (CI 95%: $1.38 to $2.02) more for a 1-lb package of ground beef that includes a "Product of USA" claim over one that does not. Because the CI does not include 0, we can reject the null hypothesis that this WTP is not statistically different from 0.

Similarly, the average eligible consumer was willing to pay more for ground beef for which more production stages take place in the United States. For example, the average consumer was willing to pay $1.15 (CI 95%: $0.92 to $1.38) more for a 1-lb package of ground beef made from cattle that were born, raised, slaughtered, and processed in the United States

than an identical package of ground beef made from cattle that were only processed in the United States. Because the CI does not include 0, we can reject the null hypothesis that the difference between the amount eligible consumers are willing to pay for ground beef bearing different definitions of the "Product of USA" labeling claim is not statistically different from 0.

Table 3.7. Marginal WTP for Ground Beef Attributes

	"Product of USA" vs. No "Product of USA" (*n* = 522)			Four Definitions of "Product of USA" (*n* = 527)		
Attribute	**Mean ($)**	**95% CI**	**% Increase Over Mean Price[a]**	**Mean ($)**	**95% CI**	**% Increase Over Mean Price[a]**
Free from antibiotics vs. not free from antibiotics	1.98	1.61–2.34	41%	1.16	0.95–1.37	24%
Grass fed vs. not grass fed	0.81	0.61–1.01	17%	0.51	0.36–0.67	11%
"Product of USA" vs. not "Product of USA"	1.69	1.38–2.02	35%	N/A	N/A	N/A
Slaughtered and processed in USA vs. processed in USA	N/A	N/A	N/A	0.30	0.16–0.43	6%
Raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	0.86	0.67–1.05	18%
Born, raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	1.15	0.92– 1.38	24%

Source: "Product of USA" Web-Based Survey/Experiment, August 2022.

[a] Mean price for 1-lb ground beef in DCE experiment was $4.79.

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights. N/A = not applicable for this model specification.

Table 3.8 presents the marginal WTP results for the two NY strip steak experiments. The average eligible consumer was willing to pay $3.21 (CI 95%: $2.60 to $3.81) more for a 1-lb NY strip steak that includes a "Product of USA" claim over one that does not. Because the CI does not include 0, we can reject the null hypothesis that this WTP is not statistically different from 0.

Similarly, the average eligible consumer was willing to pay more for NY strip steak for which more production stages take place in the United States. For example, the average consumer

was willing to pay $3.67 (CI 95%: $2.89 to $4.45) more for a 1-lb steak made from cattle that were born, raised, slaughtered, and processed in the United States than an identical steak made from cattle that were only processed in the United States. Because the CI does not include 0, we can reject the null hypothesis that the difference between the amount eligible consumers are willing to pay for NY strip steak bearing different definitions of the "Product of USA" labeling claim is not statistically different from 0.

Table 3.8. Marginal WTP for NY Strip Steak Attributes

	"Product of USA" vs. No "Product of USA" (*n* = 507)			**Four Definitions of "Product of USA" (*n* = 477)**		
Attribute	**Mean ($)**	**95% CI**	**% Increase Over Mean Price[a]**	**Mean ($)**	**95% CI**	**% Increase Over Mean Price[a]**
Free from antibiotics vs. not free from antibiotics	4.13	3.38–4.88	41%	3.59	2.89–4.29	36%
Grass fed vs. not grass fed	1.43	1.06–1.79	14%	1.35	1.01–1.70	14%
"Product of USA" vs. not "Product of USA"	3.21	2.60–3.81	32%	N/A	N/A	N/A
Slaughtered and processed in USA vs. processed in USA	N/A	N/A	N/A	1.24	0.84–1.63	12%
Raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	2.86	2.17–3.54	29%
Born, raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	3.67	2.89–4.45	37%

Source: "Product of USA" Web-Based Survey/Experiment, August 2022.

[a] Mean price for 1-lb NY strip steak in DCE experiment was $9.99.

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights. N/A = not applicable for this model specification.

Table 3.9 reports the marginal WTP results for the two pork tenderloin experiments. The average eligible consumer was willing to pay $1.71 (CI 95%: $1.35 to $2.06) more for a 1-lb pork tenderloin that includes a "Product of USA" claim over one that does not. Because the CI does not include 0, we can reject the null hypothesis that this WTP is not statistically different from 0.

The average eligible consumer was willing to pay more for pork tenderloin for which more production stages take place in the United States. For example, the average eligible consumer was willing to pay $1.65 (CI 95%: $1.23 to $2.06) more for a 1-lb tenderloin made from hogs that were born, raised, slaughtered, and processed in the United States than an identical pork tenderloin made from hogs that were only processed in the United States. Because the CI does not include 0, we can reject the null hypothesis that the difference between the amount eligible consumers are willing to pay for pork tenderloin bearing different definitions of the "Product of USA" labeling claim is not statistically different from 0.

Table 3.9. Marginal WTP for Pork Tenderloin Attributes

	"Product of USA" vs. No "Product of USA" (*n* = 370)			Four Definitions of "Product of USA" (*n* = 330)		
Attribute	**Mean ($)**	**95% CI**	**% Increase Over Mean Price[a]**	**Mean ($)**	**95% CI**	**% Increase Over Mean Price[a]**
Free from added hormones vs. not free from added hormones	2.32	1.84–2.79	58%	1.73	1.35–2.11	43%
Lean vs. not lean	1.38	1.09–1.67	35%	0.9	0.66–1.15	23%
"Product of USA" vs. not "Product of USA"	1.71	1.35–2.06	43%	N/A	N/A	N/A
Slaughtered and processed in USA vs. processed in USA	N/A	N/A	N/A	0.5	0.27–.730	13%
Raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	1.24	0.88–1.60	31%
Born, raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	1.65	1.23–2.06	41%

Source: "Product of USA" Web-Based Survey/Experiment, August 2022.

[a] Mean price for 1-lb pork tenderloin in DCE experiment was $3.99.

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights. N/A = not applicable for this model specification.

3.4.3 Results from Analysis Exploring Whether WTP Varies by Household Income

We conducted analyses to explore whether WTP varies by household income (presented in **Tables 3.10** through **3.12**). Based on the results of these analyses, the average eligible

higher-income consumer and the average eligible lower-income consumer are both willing to pay more for ground beef, NY strip steak, and pork tenderloin labeled with the "Product of USA" labeling claim compared with a product without this claim. When comparing the marginal WTP values for the two income groups, we found that the differences were not statistically significant.

Similarly, the average eligible consumer in both income groups was willing to pay more for ground beef, NY strip steak, and pork tenderloin for which more production stages (e.g., born, raised, slaughtered, and processed versus processed only) take place in the United States. When comparing the marginal WTP values for the two income groups, we found that the differences were not statistically significant for any production location.

Table 3.10. Marginal WTP for Ground Beef Attributes by Income Group

	"Product of USA" vs. No "Product of USA" (*n* = 522)			Four Definitions of "Product of USA" (*n* = 527)		
Attribute	**Mean ($)**	**95% CI**	**% Increase Over Mean Price[a]**	**Mean ($)**	**95% CI**	**% Increase Over Mean Price[a]**
Higher Income						
"Product of USA" vs. not "Product of USA"	1.56	1.20–1.92	32%	N/A	N/A	N/A
Slaughtered and processed in USA vs. processed in USA	N/A	N/A	N/A	0.36	0.17–0.54	8%
Raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	1.01	0.74–1.28	21%
Born, raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	1.32	0.99–1.66	28%
Lower Income						
"Product of USA" vs. not "Product of USA"	1.33	0.83–1.83	33%	N/A	N/A	N/A
Slaughtered and processed in USA vs. processed in USA	N/A	N/A	N/A	0.35	0.08–0.63	7%
Raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	0.88	0.48–1.28	18%
Born, raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	1.27	0.82–1.71	27%

(continued)

Table 3.10. Marginal WTP for Ground Beef Attributes by Income Group (continued)

Attribute	"Product of USA" vs. No "Product of USA" (*n* = 522)			Four Definitions of "Product of USA" (*n* = 527)		
	Mean ($)	95% CI	% Increase Over Mean Price[a]	Mean ($)	95% CI	% Increase Over Mean Price[a]
	Difference (Higher Income − Lower Income)					
"Product of USA" vs. not "Product of USA"	0.23	−0.32–0.77	N/A	N/A	N/A	N/A
Slaughtered and processed in USA vs. processed in USA	N/A	N/A	N/A	0.01	−0.32–0.33	N/A
Raised, slaughtered, and processed in USA vs. processed in USA"	N/A	N/A	N/A	0.13	−0.34–0.61	N/A
Born, raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	0.05	−0.49–0.61	N/A

Source: "Product of USA" Web-Based Survey/Experiment, August 2022.

[a] Mean price for 1-lb ground beef in DCE experiment was $4.79.

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights. The results of the Wald test are contained in the 95% confidence interval. As one can see, all confidence intervals for the difference between higher income and lower income contain zero. This implies that there is no statistically significant difference in the marginal WTP for these two groups (i.e., the p-value for the Wald test statistic exceeds 0.05). N/A = not applicable for this model specification.

Table 3.11. Marginal WTP for NY Strip Steak Attributes by Income Group

	"Product of USA" vs. No "Product of USA" (*n* = 507)			Four Definitions of "Product of USA" (*n* = 477)		
Attribute	**Mean ($)**	**95% CI**	**% Increase Over Mean Price[a]**	**Mean ($)**	**95% CI**	**% Increase Over Mean Price[a]**
Higher Income						
"Product of USA" vs. Not "Product of USA"	3.23	2.55–3.90	32%	N/A	N/A	N/A
Slaughtered and processed in USA vs. processed in USA	N/A	N/A	N/A	0.89	0.50–1.29	9%
Raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	2.38	1.81–2.95	24%
Born, raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	3.07	2.40–3.75	31%
Lower Income						
"Product of USA" vs. not "Product of USA"	3.31	2.27–4.35	33%	N/A	N/A	N/A
Slaughtered and processed in USA vs. processed in USA	N/A	N/A	N/A	1.90	0.91–2.89	19%
Raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	3.65	2.23–5.08	37%
Born, raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	4.53	3.03–6.04	45%
Difference (Higher Income – Lower Income)						
"Product of USA" vs. not "Product of USA"	−0.08	−1.18–1.02	N/A	N/A	N/A	N/A
Slaughtered and processed in USA vs. processed in USA	N/A	N/A	N/A	−1.01	−2.05–0.04	N/A
Raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	−1.27	−2.76–0.22	N/A

(continued)

Table 3.11. Marginal WTP for NY Strip Steak Attributes by Income Group (continued)

	"Product of USA" vs. No "Product of USA" (*n* = 507)			Four Definitions of "Product of USA" (*n* = 477)		
Attribute	**Mean ($)**	**95% CI**	**% Increase Over Mean Price[a]**	**Mean ($)**	**95% CI**	**% Increase Over Mean Price[a]**
Born, raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	−1.46	−3.01–0.08	N/A

Source: "Product of USA" Web-Based Survey/Experiment, August 2022.

[a] Mean price for 1-lb NY strip steak in DCE experiment was $9.99.

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights. The results of the Wald test are contained in the 95% confidence interval. As one can see, all confidence intervals for the difference between higher income and lower income contain zero. This implies that there is no statistically significant difference in the marginal WTP for these two groups (i.e., the p-value for the Wald test statistic exceeds 0.05). N/A = not applicable for this model specification.

Table 3.12. Marginal WTP for Pork Tenderloin Attributes by Income Group

	"Product of USA" vs. No "Product of USA" (*n* = 370)			Four Definitions of "Product of USA" (*n* = 330)		
Attribute	**Mean ($)**	**95% CI**	**% Increase Over Mean Price[a]**	**Mean ($)**	**95% CI**	**% Increase Over Mean Price[a]**
Higher Income						
"Product of USA" vs. not "Product of USA"	1.61	1.23–1.98	40%	N/A	N/A	N/A
Slaughtered and processed in USA vs. processed in USA	N/A	N/A	N/A	0.41	0.16–0.66	10%
Raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	1.10	0.74–1.45	28%
Born, raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	1.55	1.13–1.96	39%

(continued)

Table 3.12. Marginal WTP for Pork Tenderloin Attributes by Income Group (continued)

Attribute	"Product of USA" vs. No "Product of USA" (*n* = 370)			Four Definitions of "Product of USA" (*n* = 330)		
	Mean ($)	95% CI	% Increase Over Mean Price[a]	Mean ($)	95% CI	% Increase Over Mean Price[a]
Lower Income						
"Product of USA" vs. not "Product of USA"	1.83	1.20–2.46	46%	N/A	N/A	N/A
Slaughtered and processed in USA vs. processed in USA	N/A	N/A	N/A	0.66	0.2–1.12	17%
Raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	1.33	0.59–2.07	33%
Born, raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	1.80	0.98–2.61	45%
Difference (Higher Income − Lower Income)						
"Product of USA" vs. not "Product of USA"	−0.22	−0.85–0.40	N/A	N/A	N/A	N/A
Slaughtered and processed in USA vs. processed in USA	N/A	N/A	N/A	−0.25	−0.78–0.27	N/A
Raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	−0.23	−1.04–0.58	N/A
Born, raised, slaughtered, and processed in USA vs. processed in USA	N/A	N/A	N/A	−0.25	−1.12–0.63	N/A

Source: "Product of USA" Web-Based Survey/Experiment, August 2022.

[a] Mean price for 1-lb pork tenderloin in DCE experiment was $3.99.

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights. The results of the Wald test are contained in the 95% confidence interval. As one can see, all confidence intervals for the difference between higher income and lower income contain zero. This implies that there is no statistically significant difference in the marginal WTP for these two groups (i.e., the p-value for the Wald test statistic exceeds 0.05). N/A = not applicable for this model specification.

3.4.4 Results from Analysis Exploring Whether WTP Varies by Understanding of the "Product of USA" Labeling Claim

We explored whether WTP varies by consumer understanding of the "Product of USA" labeling claim. However, we ultimately determined that too few respondents understood the "Product of USA" claim to be able to determine whether their WTP differed from respondents

who did not understand the claim. Specifically, only 99 out of the 4,834 respondents who completed the survey passed both the unaided recall task on noticeability of the claim on a label and identified the correct definition of the "Product of USA" claim. As a result, we could not obtain statistically significant estimates of the WTP for these respondents. Therefore, we do not report detailed results here.

3.4.5 Descriptive Question Results

Tables 3.13 through **3.15** report the results for the survey questions that asked about the importance of the different attributes in eligible consumers' purchasing decisions when answering the choice questions for the ground beef, NY strip steak, and pork tenderloin experiments, respectively. Respondents rank ordered the three most important attributes; the results for the most important attribute are shown (i.e., ranked first). For the "Product of USA" versus no "Product of USA" DCEs, the following attributes were generally of the same importance for ground beef and steak: price, the "Product of USA" claim, and free from antibiotics. For pork tenderloin, price, free from added hormones, and the "Product of USA" claim were generally of the same importance. Based on these forced rankings with limited choices, the "Product of USA" claim was often of equal importance to price and other labeling claims. For the DCEs with the four definitions of "Product of USA," price was the most important attribute for ground beef and NY strip steak; however, for pork tenderloin, price and free from added hormones were the attributes of most importance. In addition to the stated importance rankings described above, we can also get a sense of which attributes are most important to consumers when making choices by examining the magnitude of the coefficients of the mixed logit model we estimated to produce the marginal WTP estimates (see Appendix E). Based on these results, we see the stated importance rankings are broadly consistent with those implied by respondents' choices.

Table 3.13. Results for Attributes Ranked as Most Important in Purchasing Decision for the Ground Beef Experiments

	"Product of USA" vs. No "Product of USA" (*n* = 522)		Four Definitions of "Product of USA" (*n* = 526)	
Attribute	**Unweighted Sample Size**	**Weighted Percentage (95% CI)**	**Unweighted Sample Size**	**Weighted Percentage (95% CI)**
Grass fed	36	7.3 (5.2–10.1)	58	10.3 (7.9–13.4)
Free from antibiotics	153	29.8 (25.8–34.3)	173	32.5 (28.2–37.1)
"Product of USA"	166	29.1 (25.1–33.3)	N/A	N/A

(continued)

Table 3.13. Results for Attributes Ranked as Most Important in Purchasing Decision for the Ground Beef Experiments (continued)

	"Product of USA" vs. No "Product of USA" (*n* = 522)		Four Definitions of "Product of USA" (*n* = 526)	
Attribute	**Unweighted Sample Size**	**Weighted Percentage (95% CI)**	**Unweighted Sample Size**	**Weighted Percentage (95% CI)**
Location produced	N/A	N/A	62	10.8 (8.3–14.0)
Price	167	33.8 (29.5–38.4)	233	46.4 (41.7–51.1)

Source: "Product of USA" Web-Based Survey/Experiment, August 2022. Number of respondents = 1,049. The number of missing values = 1.

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights. N/A= not applicable.

Table 3.14. Results for Attributes Ranked as Most Important in Purchasing Decision for the NY Strip Steak Experiments

	"Product of USA" vs. No "Product of USA" (*n* = 507)		Four Definitions of "Product of USA" (*n* = 477)	
Attribute	**Unweighted Sample Size**	**Weighted Percentage (95% CI)**	**Unweighted Sample Size**	**Weighted Percentage (95% CI)**
Grass fed	40	8.2 (6.0–11.2)	38	7.4 (5.3–10.2)
Free from antibiotics	158	31.4 (27.2–35.9)	169	34.5 (30.0–39.2)
"Product of USA"	134	25.6 (21.8–29.9)	N/A	N/A
Location produced	N/A	N/A	64	13.6 (10.6–17.3)
Price	175	34.8 (30.4–39.5)	206	44.6 (39.7–49.5)

Source: "Product of USA" Web-Based Survey/Experiment, August 2022. Number of respondents = 984.

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights. N/A= not applicable.

Table 3.15. Results for Attributes Ranked as Most Important in Purchasing Decision for the Pork Tenderloin Experiments

	"Product of USA" vs. No "Product of USA" (*n* = 370)		Four Definitions of "Product of USA" (*n* = 330)	
Attribute	**Unweighted Sample Size**	**Weighted Percentage (95% CI)**	**Unweighted Sample Size**	**Weighted Percentage (95% CI)**
Lean	46	12.6 (9.3–16.8)	40	11.6 (8.4–15.8)
Free from added hormones	113	30.9 (26.0–36.2)	116	35.8 (30.4–41.6)
"Product of USA"	90	24.0 (19.7–29.0)	N/A	N/A
Location produced	N/A	N/A	38	11.5 (8.3–15.8)
Price	121	32.5 (27.6–37.8)	136	41.1 (35.5–46.9)

Source: "Product of USA" Web-Based Survey/Experiment, August 2022. Number of respondents = 700.

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights. N/A= not applicable.

Tables 3.16 through **3.18** report the results of the survey questions that asked about the labeling claims consumers look for when buying ground beef, NY strip steak, and pork tenderloin, respectively. As shown in **Figure 3.1**, the percentage of eligible consumers who reported they always or most of the time look for the "Product of USA" claim ranged from 43% to 48% depending on the type of product. The percentage of eligible consumers who sometimes look for this claim ranged from 25% to 27%, and the percentage of eligible consumers who never or rarely look for this claim or reported never seeing it ranged from 27% to 32%.

For respondents completing the ground beef and NY strip steak DCEs, the percentage of eligible consumers who reported they always or most of the time look for the free from antibiotics claim ranged from 40% to 47%. The percentage of eligible consumers who reported they always or most of the time look for the grass-fed claim was 30%.

For respondents completing the pork tenderloin DCEs, the percentage of eligible consumers who reported they always or most of the time look for the free from added hormones claim was 48%. The percentage of eligible consumers who reported they always or most of the time look for the lean claim was 48%.

Based on these results, nearly half of eligible consumers reported they always or most of the time look for the "Product of USA" labeling claim when shopping for ground beef, NY

strip steak, and pork tenderloin; the free from antibiotics claim when shopping for ground beef and NY strip steak; and the free from added hormones and lean claims when shopping for pork tenderloin.

Figure 3.1. Frequency with Which Eligible Consumers Look for the "Product of USA" Claim When Shopping

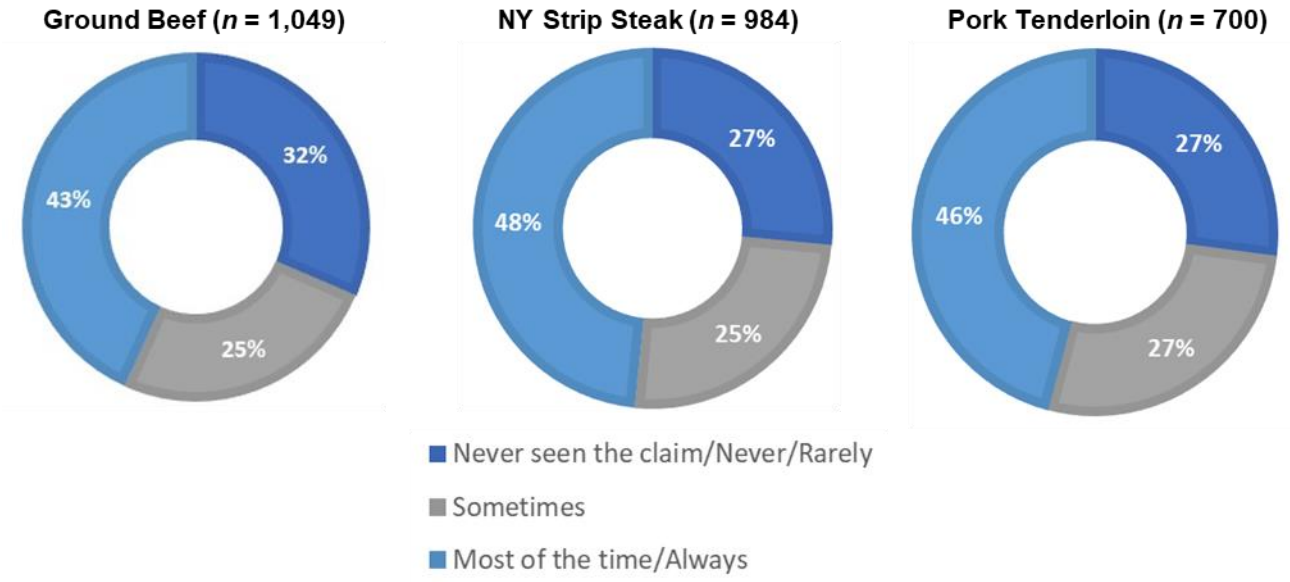


Table 3.16. Results for Frequency of Looking for Labeling Claims When Buying Ground Beef

Labeling Claim	Never Seen the Claim	Never	Rarely	Some-times	Most of the Time	Always
Grass-fed						
Unweighted sample size	47	131	228	328	209	104
Weighted percentage, % (95% CI)	4.6 (3.3–6.2)	13.1 (10.9–15.5)	21.6 (19.0–24.4)	31.0 (28.1–34.2)	18.9 (16.5–21.6)	10.7 (8.8–13.1)
Free from antibiotics						
Unweighted sample size	45	102	187	288	229	196
Weighted percentage, % (95% CI)	4.4 (3.3–6.0)	10.4 (8.5–12.6)	17.7 (15.3–20.4)	27.5 (24.6–30.5)	21.4 (18.9–24.2)	18.6 (16.1–21.3)
"Product of USA"						
Unweighted sample size	37	93	182	251	294	192
Weighted percentage, % (95% CI)	3.5 (2.5–5.0)	9.8 (7.9–12.0)	18.1 (15.7–20.8)	25.4 (22.5–28.4)	26.0 (23.3–28.9)	17.2 (14.9–19.8)

Source: "Product of USA" Web-Based Survey/Experiment, August 2022. Number of respondents = 1,049. Number of missing values ranges from 0 to 2 depending on the item.

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights.

Table 3.17. Results for Frequency of Looking for Labeling Claims When Buying NY Strip Steak

Labeling Claim	Never Seen the Claim	Never	Rarely	Some-times	Most of the Time	Always
Grass-fed						
Unweighted sample size	30	120	201	322	202	106
Weighted percentage, % (95% CI)	3.0 (2.0–4.3)	12.6 (10.5–15.1)	21.0 (18.3–23.9)	33.0 (29.8–36.3)	20.0 (17.5–22.9)	10.3 (8.5–12.5)
Free from antibiotics						
Unweighted sample size	33	87	161	235	262	203
Weighted percentage, % (95% CI)	3.2 (2.3–4.6)	9.4 (7.6–11.6)	17.6 (15.1–20.5)	22.8 (20.2–25.7)	25.8 (23.0–28.8)	21.1 (18.4–24.0)
"Product of USA"						
Unweighted sample size	20	77	151	244	299	189
Weighted percentage, % (95% CI)	1.8 (1.2–2.9)	8.6 (6.8–10.8)	16.1 (13.7–18.8)	25.1 (22.2–28.2)	29.5 (26.5–32.6)	18.9 (16.4–21.7)

Source: "Product of USA" Web-Based Survey/Experiment, August 2022. Number of respondents = 984. Number of missing values ranges from 3 to 4 depending on the item.

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights.

Table 3.18. Results for Frequency of Looking for Labeling Claims When Buying Pork Tenderloin

Labeling Claim	Never Seen the Claim	Never	Rarely	Some-times	Most of the Time	Always
Lean						
Unweighted sample size	24	37	74	232	199	132
Weighted percentage, % (95% CI)	3.4 (2.2–5.3)	5.2 (3.7–7.2)	10.6 (8.3–13.3)	33.0 (29.4–36.9)	27.6 (24.3–31.3)	20.2 (17.0–23.7)
Free from added hormones						
Unweighted sample size	20	41	90	219	198	128
Weighted percentage, % (95% CI)	2.7 (1.7–4.4)	5.8 (4.2–7.9)	13.6 (11.0–16.6)	30.5 (26.9–34.2)	28.5 (25.0–32.2)	19.0 (16.0–22.5)
"Product of USA"						
Unweighted sample size	22	57	103	188	197	129
Weighted percentage, % (95% CI)	3.3 (2.2–5.2)	8.9 (6.8–11.5)	14.9 (12.3–18.0)	27.1 (23.7–30.78	27.7 (24.3–31.4)	18.1 (15.2–21.3)

Source: "Product of USA" Web-Based Survey/Experiment, August 2022. Number of respondents = 700. Number of missing values ranges from 2 to 4 depending on the item.

Notes: Estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights.

4. Conclusion

To help inform FSIS's comprehensive review of the current voluntary "Product of USA" labeling claim, we conducted a nationally representative web-based survey/experiment for "Product of USA" labeling on meat (beef and pork) products. We summarize below the key findings organized by the three research questions.

4.1 Do Consumers Notice the "Product of USA" Labeling Claim?

Based on the results of the LTE experiment, eligible consumers do notice the "Product of USA" claim on product labels. Noticeability of the "Product of USA" claim varied depending on whether the respondent was prompted (i.e., unaided recall vs. cued recognition): we found higher noticeability for the cued recognition task. Noticeability was also a function of how the claim was formatted. For the unaided recall task, saliency ranged from 9% (plain text in a list of other claims) to 31% (claim with U.S. flag icon).

4.2 Do Consumers Understand the Current "Product of USA" Definition and Other "USDA" Labeling (e.g., USDA Choice) as it Relates to Country of Origin?

Based on the analysis of the responses to the knowledge questions, eligible consumers have limited understanding for the "Product of USA" labeling claim. About 16% of eligible consumers identified the correct definition for the "Product of USA" claim (i.e., the product must be processed in the United States; the animals can be born, raised, and slaughtered in another country), 63% provided an incorrect response with most thinking the claim means that all production steps take place in the United States, and 21% said they did not know.

Many eligible consumers identified the correct meaning of USDA Choice and the USDA mark of inspection, and relatively few consumers had misperceptions about this labeling regarding country of origin. About 18% of eligible consumers mistakenly believed that USDA Choice means the meat is a product of the United States, and 11% mistakenly believed that the USDA mark of inspection means the meat is a product of the United States.

4.3 How Much are Consumers Willing to Pay for Meat Products Bearing the "Product of USA" Labeling Claim for the Current Definition and Potential Revised Definitions?

Based on the analysis of the responses to the DCE questions, eligible consumers were willing to pay more for meat products bearing the "Product of USA" claim versus products without this claim (when no definition was provided), as shown in **Table 4.1**. Specifically, we found the average marginal WTP was $1.69 for 1 lb of ground beef, $3.21 for 1 lb of NY strip steak, and $1.71 for 1 lb of pork tenderloin. Likewise, how much consumers were willing to pay for a meat product differed based on the location of each production step. We found that eligible consumers were willing to pay a premium for meat products where more

production steps took place inside the United States over meat products that were just processed in the United States. Eligible consumers were willing to pay the greatest price premium for meat products where all production steps (born, raised, slaughtered, processed) take place in the United States. Specifically, the average marginal WTP for meat products for products where all production steps take place in the United States was $1.15 for 1 lb of ground beef, $3.67 for 1 lb of NY strip steak, and $1.65 for 1 lb of pork tenderloin.

Table 4.1. Results for the WTP Analysis for the "Product of USA" Labeling Claim[a]

	"Product of USA" claim vs. no claim (no definition provided for the claim)		All production steps (born, raised, slaughtered, processed) take place in the United States vs. only processed in the United States	
Product	**Increased WTP ($)**	**Percentage Increase over Mean Price[b]**	**Increased WTP ($)**	**Percentage Increase over Mean Price[b]**
1-lb ground beef	$1.69	35%	$1.15	24%
1-lb NY strip steak	$3.21	32%	$3.67	37%
1-lb pork tenderloin	$1.71	43%	$1.65	41%

[a] The WTP results for the two sets of results should not be compared directly because two different approaches were used to estimate WTP.

[b] Mean prices: $4.79 per lb for ground beef, $9.99 per lb for NY strip steak, and $3.99 per lb for pork tenderloin. Mean prices were calculated using price data from the 3 months leading up to the survey launch (March, April, and May 2022) collected from USDA's national weekly retail activity report (USDA, n.d.).

Analyses that explored whether WTP for meat products bearing the "Product of USA" labeling claim varied by lower versus higher household income revealed no statistically significant differences in WTP by income level. We also conducted analyses to explore whether WTP for meat products bearing the "Product of USA" labeling claim varied by consumer understanding (i.e., whether consumers noticed it on the label and knew the correct definition); however, we ultimately determined that too few respondents understood the "Product of USA" labeling claim to be able to determine whether their WTPs differed from respondents who did not understand the claim.

A direct question after the DCE experiment asked about the frequency of purchasing the product when grocery shopping. The percentage of eligible consumers who reported they always or most of the time look for the "Product of USA" labeling claim when buying meat products ranged from 43% (ground beef) to 48% (NY strip steak).

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Appendix A:
Instrument for Web-Based Survey/Experiment

OMB Control Number: 0583-0186
Expiration date: 06/30/2025

[DISPLAY 1]

RTI International is conducting this survey with funding from the U.S. Department of Agriculture (USDA). For this survey, you will answer questions about grocery shopping and cooking. Your participation in this study is completely voluntary. All your answers will be kept private. In our experience, answering the survey questions involves no more risk of harm than you would experience in everyday life.

If you have any questions about the study, you may contact Jenna Brophy of RTI at 1-800-334-8571, extension 28881 or by email at jbrophy@rti.org. If you have any questions about your rights as a study participant, you may contact RTI's Office of Research Protection at 1-866-214-2043 or by email at orpe@rti.org.

[DISPLAY 2]

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid Office of Management and Budget (OMB) control number. The valid OMB control number for this information collection is 0583-0186, and the expiration date is 06/30/2025. The time required to complete this information collection is estimated to average 20 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

[SP]

[Prompt if Refused]

[DISPLAY 3]

The first set of questions asks about grocery shopping and cooking.

[SP]

[Prompt if Refused]

S2.[1] When it comes to grocery shopping in your household (at a store or online), would you say …?

1. You do all of it
2. You do most of it
3. You do about half of it
4. Someone else does most of it; you do some of it (TERMINATE)
5. Someone else does all of it (TERMINATE)

[1] Question numbers are not sequential because some questions were deleted after the cognitive interviews.

[Terminate if S2 = 4, 5, or refused]

[SP FOR EACH ROW; randomize order]

[Prompt if Refused]

S3. For each of the following products, select Yes or No to indicate whether you purchased it from the grocery store/butcher or online **within the past 6 months**. Do not include prepackaged meal kits that provide the recipes and ingredients to prepare at home.

	Yes, purchased (1)	No, did NOT purchase (0)
Beef		
Pork		
Chicken		
Turkey		
Fish		
Shellfish		

[Terminate if S3 = 0 or refused for both beef AND pork]

[MP]

D1. Which of the following items do you have in your kitchen? *Select all that apply*.

1. Can opener
2. Food thermometer
3. Turkey baster
4. Potato peeler
5. Spatula
6. Garlic press
7. None of the above **[EXCLUSIVE]**

[SP]

D2. When cooking a food product at home for the first time, how often do you read the cooking instructions on the package before you start cooking?

1. Never
2. Rarely
3. Sometimes
4. Most of the time
5. Always

Limited Time Exposure (LTE) Experiment

Practice LTE

[DISPLAY 4]

For the next question, assume you are at the grocery store/butcher or shopping online, and you are going to buy a package of frozen chicken tenders. On the next screen, we are going to show you a package of chicken tenders. You will see the product for 20 seconds. Please carefully review the information on the product package because we are going to ask you a few questions about what you saw.

[DISPLAY FOOD PACKAGE LTE_practice.jpg]—20 seconds

[Do not allow respondent to go back in survey]

[TEXT; code each row as separate variable; 5 visible rows, add up to 3 sets]

L1. Please list everything you remember seeing on the food package. Please type each thing you remember seeing, such as words, pictures, and symbols, on a SEPARATE row. For pictures or symbols, please provide a description of what you saw.

Click the MORE button to add more rows. Take as much time as you need. Click the ">>" button when done.

MORE button **[ADD SAME NUMBER OF ROWS SHOWN ON PREVIOUS SCREEN]**

[DISPLAY 4a]

Now we are going to ask you if you remember seeing different words, pictures, or symbols on the product package. **Only click YES if you are sure you saw the words, pictures, or symbols; otherwise, click NO.**

[RANDOMIZE ORDER OF L2–L5; 2 hits and 2 misses]

[SP]

L2. Do you remember seeing "All Vegetarian Diet"?

1. Yes
0. No

[SP]

L3. Do you remember seeing this image?

1. Yes
0. No

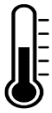
[SP]

L4. Do you remember seeing "Do Not Microwave"?

1. Yes
0. No

[SP]

L5. Do you remember seeing this image?



1. Yes
0. No

[DISPLAY 5]

LTE

For the next question, assume you are at the grocery store/butcher or shopping online, and you are going to buy a package of ground beef.

On the next screen, we are going to show you a package of ground beef. You will see the package for 20 seconds. Please carefully review the information on the product package because we are going to ask you a few questions about what you saw.

[RANDOM ASSIGNMENT TO 1 OF 4 CONDITIONS; LTE_P-USA_X.jpg]—20 seconds

NOTE: 1 = control, 2 = icon, 3 = border, 4 = plain text

[Do not allow respondent to go back in survey]

Version 1 = control

Version 2 = icon

Version 3 = border

Version 4 = plain text

[TEXT—code each row as separate variable; 5 visible rows, add up to 3 sets]

L6. Please list everything you remember seeing on the food package. Please type each thing you remember seeing, such as words, pictures, and symbols, on a SEPARATE row. For pictures or symbols, please provide a description of what you saw.

Click the MORE button to add more rows. Take as much time as you need. Click the ">>" button when done.

MORE button **[ADD SAME NUMBER OF ROWS SHOWN ON PREVIOUS SCREEN]**

[DISPLAY 5a]

Now we are going to ask you if you remember seeing different words, pictures, or symbols on the product package. **Only click YES if you are sure you saw the word, picture, or symbol; otherwise, click NO.**

[RANDOMIZE ORDER OF L7/L7A–L14A/B; 4 hits and 4 misses]

[IF LTE CONDITION = 4 (TREATMENT—P-USA is TEXT ONLY) DISPLAY L7A; OTHERWISE, DISPLAY 7]

[Prompt if Refused]

[SP] (HIT 1)

L7A. Do you remember seeing "Product of USA"?

1. Yes
0. No

[Prompt if Refused]

[SP] (HIT 1; MISS FOR CONTROL GROUP)

L7. Do you remember seeing this image?

"[INSERT PUSA_Flag.jpg for LTE CONDITION 1 and LTE CONDITION V2, INSERT PUSA Border.jpg for LTE CONDITION 3]

1. Yes
0. No

Note: The image for Condition 2 (flag icon) is shown.

[SP] (HIT 2—ON THE LABEL)

L8. Do you remember seeing "No Antibiotics and No Added Hormones"?

1. Yes

0. No

[SP] (HIT 3)

L9. Do you remember seeing this image?

1. Yes
0. No

[SP] (HIT 4)

L10. Do you remember seeing "100% Grass Fed"?

1. Yes
0. No

[SP] (MISS 1—NOT ON THE LABEL)

L11. Do you remember seeing "Sustainably Raised"?

1. Yes
0. No

[SP] (MISS 2)

L12. Do you remember seeing "Eco Friendly"?

1. Yes
0. No

[SP] (MISS 3)

L13. Do you remember seeing this image?

1. Yes
0. No

[IF LTE CONDITION = 1 (CONTROL), DISPLAY L14A; OTHERWISE, DISPLAY 14B]

[SP] (HIT 4—CONTROL GROUP)

L14A. Do you remember seeing this image?

1. Yes
0. No

[SP] (MISS 4—TREATMENT GROUP)

L14B. Do you remember seeing this image?

1. Yes
0. No

Questions on Consumer Understanding and Confusion

[DISPLAY 6]

Please answer the next questions that ask about labeling claims and other information that may be on meat (beef or pork) products based on your current knowledge. Labeling claims provide information to consumers when they are trying to decide whether to buy a product. Meat producers can put labeling claims on their products if they meet certain requirements. For example, for a meat product to be labeled as "organic," it must be produced through approved methods.

[randomize questions K1–K4]

[Prompt if Refused]

[SP, randomize response options]

K1. To your knowledge, what does the **"Product of USA"** labeling claim on meat products mean?

For the answer choices below, a meat product "**processed in the USA**" means the meat was packaged in the USA or cut/ground (for example, into pork chops or hamburger) and then packaged in the USA.

1. The product must be made from animals born, raised, and slaughtered and the meat then processed in the USA.
2. The product must be made from animals raised and slaughtered and the meat then processed in the USA; the animals can be born in another country.
3. The product must be made from animals slaughtered and the meat then processed in the USA; the animals can be born and raised in another country.
4. The product must be processed in the USA; the animals can be born, raised, and slaughtered in another country. *[Correct response]*
5. Not sure/don't know

[SP, randomize response options]

K2. To your knowledge, what does the **"Natural"** labeling claim on meat products mean?

1. The product must be made from meat with no added colors or artificial ingredients and made in a way that does not change the meat itself (i.e., minimally processed). *[Correct response]*
2. The animals used to make the product were never given antibiotics throughout their lifetimes.
3. The animals used to make the product were never given synthetic or artificial hormones throughout their lifetimes.
4. Not sure/don't know

[MP, randomize response options]

K3. To your knowledge, what does **"USDA Choice"** on beef products mean? *Select all that apply.*

1. The beef was evaluated (graded) and is considered high-quality beef for tenderness, juiciness, and flavor. *[Correct response]*
2. The cows used to produce the beef were treated humanely from birth to slaughter on farms that provide suitable living conditions that meet the animals' needs.
3. The beef does not contain any bacteria (e.g., *Salmonella*) that can cause foodborne illness.
4. The beef is a product of the USA.
5. Not sure/don't know

[MP , randomize response options]

K4. Please look at this symbol.

To your knowledge, what does this symbol on meat products mean? *Select all that apply.*

1. The meat was produced under federal inspection of the U.S. Department of Agriculture (USDA). *[Correct response]*
2. The animals used to produce the meat were treated humanely from birth to slaughter on farms that provide suitable living conditions that meet the animals' needs.
3. The meat does not contain any bacteria (e.g., *Salmonella*) that can cause foodborne illness.
4. The meat is a product of the USA.
5. Not sure/don't know

Discrete Choice Experiment (DCE) – Random Assignment to Version 1-6

DCE 1: Ground Beef—P-USA with No Definition vs. No P-USA

[DISPLAY 8]

For the next part of the survey, imagine you are visiting a grocery store/butcher or shopping online to buy ground beef. In the next set of questions, we will ask you to consider two ground beef products. These packages of ground beef will differ based on the features described on the next screen.

Please take a few minutes to read this information carefully. You can go back to it if you need to by clicking the **Review Product Information** button. **[DISPLAY "Review Product Information" BUTTON FOR EACH CHOICE QUESTION]**

[DISPLAY 9]

- **Price/pound:** Dollars per 1 pound of ground beef. These prices typically range from $3.89 to $5.69.
- **Labeling claims:** The U.S. government reviews labeling claims producers make about their product. For example, if a producer claims that it is selling grass fed beef, the producer must show the government its products are produced from cattle mostly fed grass over their life. The survey asks about the following claims:
  - **Grass-fed:** Made from cattle mostly fed grass over their life.
  - **Free from antibiotics:** Made from cattle that were never given antibiotics during their lifetime.
  - **Product of USA:** The ground beef was packaged in the USA or ground and then packaged in the USA. The cattle used to make the ground beef can come from another country or countries.

[DISPLAY 12]

It is important that we get accurate results to the survey. In prior surveys, some respondents did not consider their answers to these questions carefully. For example, in one survey, most respondents said they would buy a new product. However, when a grocery store stocked the product, only about half actually bought the new product when they had to pay for it with their own money. This can lead to misleading survey results. So, it is important that you make each of your upcoming choices like you would if you were actually making these exact choices in a grocery store/butcher or online.

Practice DCE

[DISPLAY 12A]

To start, consider Product A and Product B. Please assume they are the brand that you usually buy. Both products are packages of USDA-inspected 85% lean/15% fat ground beef sold by the pound and have the same weight and expiration (sell-by) date and the same general appearance. The products are the same except for the labeling features shown on the next screen. Please carefully consider each product.

[DISPLAY 12B]

Product Features	Product A	Product B
Grass fed	No	No
Free from antibiotics	Yes	Yes
Product of USA	Yes	Yes
Price/pound	$3.89	$5.69

[SP]

[Prompt if Refused]

DCE_P. Given these two options, which package of ground beef would you buy?

1. Product A
2. Product B
3. Neither

[If DCE_P = Product A, then display]

[DISPLAY 13A]

In this question, each product was exactly the same except Product A cost less than Product B. You chose Product A, the option that cost less.

In the following questions, products will differ in more than one way. **Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.**

[If DCE_P = Neither or Product B]

DCE_N. Why did you choose [Pipe in answer: Product B/Neither] as your response?

[TEXT BOX]

[If DCE_P = Product B, then display]

[DISPLAY 13B]

Please read these questions carefully. In this question, each product was exactly the same except Product A cost less than Product B. However, you chose Product B, the option that cost more.

In the following questions, products will differ in more than one way. **Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.**

[If DCE_P = Neither]

Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.

DCE Questions

DCE_1 through DCE_9 [Programming note: Each respondent will see nine DCE questions according to an experimental design. Each question will resemble the question below. Following DCE best practices, the order of attributes will be randomized.]

[Prompt if Refused for DCE1]

Product Features	Product A	Product B
Price/pound		
Free from antibiotics		
Grass fed		
Product of USA		

Given these two options, which package of ground beef would you buy?

1. Product A
2. Product B
3. Neither

DCE_14_FC [All respondents will see the same fixed-choice DCE question.]

[Prompt if Refused]

Product Features	Product A	Product B
Price/pound	$3.89	$3.89
Free from antibiotics	Yes	Yes
Grass fed	Yes	Yes
Product of USA	Yes	No

Given these two options, which package of ground beef would you buy?

1. Product A
2. Product B
3. Neither

[DISPLAY 14]

The next questions ask about how important the different features of ground beef are to you. Please think about how you made your decision to choose either Product A, Product B, or neither product for the questions you just answered.

[SP, randomize response options]

[Prompt if Refused]

DCE_15a. When making your choices, which feature of ground beef was **<u>most important</u>** when deciding which product to buy?

1. Grass-fed cattle
2. Free from antibiotics
3. Product of USA
4. Price

[SP]

DCE_15b. Which feature of ground beef was **second** most important when deciding which product to buy? *(Note: Response that was first most important will not be shown.)*

1. Grass-fed cattle
2. Free from antibiotics
3. Product of USA
4. Price

[SP]

DCE_15c. Which feature of ground beef was **third** most important when deciding which product to buy? *(Note: Responses that were first and second most important will not be shown.)*

1. Grass-fed cattle
2. Free from antibiotics
3. Product of USA
4. Price

[SP FOR EACH ROW; RANDOMIZE ORDER]

DCE_16. When grocery shopping (at a store or online), how often do you look for the following labeling claims when buying ground beef?

Variable Name	Labeling Claim	Never Seen the Claim	Never	Rarely	Sometimes	Most of the Time	Always
DCE_16a	Grass-fed cattle						
DCE_16b	Free from antibiotics						
DCE_16c	Product of USA						

[SP]

DCE_17. Did you purchase ground beef from the grocery store/butcher or online **within the past 6 months**?

1. Yes
0. No

DCE 2: Ground Beef—Current Definition vs. Three Alternative Definitions

[DISPLAY 8]

For the next part of the survey, imagine you are visiting a grocery store/butcher or shopping online to buy ground beef. In the next set of questions, we will ask you to consider two ground beef products. These packages of ground beef will differ based on the features described on the next screen.

Please take a few minutes to read this information carefully. You can go back to it if you need to by clicking the **Review Product Information** button. **[DISPLAY "Review Product Information" BUTTON FOR EACH CHOICE QUESTION]**

[DISPLAY 9]

- **Price/pound:** Dollars per 1 pound of ground beef. These prices typically range from $3.89 to $5.69.
- **Labeling claims:** The U.S. government reviews labeling claims producers make about their product. For example, if a producer claims that it is selling grass fed beef, the producer must show the government its products are produced from cattle mostly fed grass over their life. The survey asks about the following claims:
  - **Grass-fed:** Made from cattle mostly fed grass over their life.
  - **Free from antibiotics:** Made from cattle that were never given antibiotics during their lifetime.

[DISPLAY 10]

- **Location produced:** The beef in a package of ground beef can come from the USA, from another country or countries, or from both depending on where each step of the production process of the beef takes place. As shown in the figure below, the main production locations are (1) where the cattle were born, (2) where the cattle were raised, (3) where the cattle were slaughtered, and (4) where the meat was processed (packaged or ground and then packaged). Cattle can be transported to a different location to be raised, slaughtered, and/or processed.

[DISPLAY 11]

- For this survey, please consider four possible options for where the ground beef was produced as described below. **If a production stage is not stated, it means the animals could come from the USA or another country or countries.**

  "Processed in the USA" means the ground beef was packaged in the USA or ground and then packaged in the USA.

  - The ground beef was **processed** in the USA.
  - The ground beef was made from cattle that were **slaughtered** and the meat then processed all within the USA.
  - The ground beef was made from cattle that were **raised** and **slaughtered** and the meat then processed all within the USA.
  - The ground beef was made from cattle that were **born, raised, and slaughtered** and the meat then processed all within the USA.

[DISPLAY 12]

It is important that we get accurate results to this survey. In prior surveys, some respondents did not consider their answers to these questions carefully. For example, in one survey, most respondents said they would buy a new product. However, when a grocery store stocked the product, only about half actually bought the new product when they had to pay for it with their own money. This can lead to misleading survey results. So, it is important that you make each of your upcoming choices like you would if you were actually making these exact choices in a grocery store/butcher or online.

Practice DCE

[DISPLAY 12A]

To start, consider Product A and Product B. Please assume they are the brand that you usually buy. Both products are packages of USDA-inspected 85% lean/15% fat ground beef sold by the pound and have the same weight and expiration (sell-by) date and the same general appearance. The products are the same except for the labeling features shown on the next screen. Please carefully consider each product.

[DISPLAY 12B]

Product Features	Product A	Product B
Grass fed	No	No
Free from antibiotics	Yes	Yes
Location produced	In the USA • Slaughtered • Processed	In the USA • Slaughtered • Processed
Price/pound	$3.89	$5.69

[SP]

[Prompt if Refused]

DCE_P. Given these two options, which package of ground beef would you buy?

1. Product A
2. Product B
3. Neither

[If DCE_P = Product A, then display]

[DISPLAY 13A]

In this question, each product was exactly the same except Product A cost less than Product B. You chose Product A, the option that cost less.

In the following questions, products will differ in more than one way. **Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.**

[If DCE_P = Neither or Product B]

DCE_N. Why did you choose [Pipe in answer: Product B/Neither] as your response?

[TEXT BOX]

[If DCE_P = Product B, then display]

[DISPLAY 13B]

Please read these questions carefully. In this question, each product was exactly the same except Product A cost less than Product B. However, you chose Product B, the option that cost more.

In the following questions, products will differ in more than one way. **Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.**

[If DCE_P = Neither]

Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.

DCE Questions

DCE_1 through DCE_9 [Programming note: Each respondent will see nine DCE questions according to an experimental design. Each question will resemble the question below. Following DCE best practices, the order of attributes in the DCE question will be randomized.]

[Prompt if Refused for DCE1]

Product Features	Product A	Product B
Price/pound		
Free from antibiotics		

Product Features	Product A	Product B
Grass fed		
Location produced		

Given these two options, which package of ground beef would you buy?

1. Product A
2. Product B
3. Neither

[DISPLAY 14]

The next questions ask about how important the different features of ground beef are to you. Please think about how you made your decision to choose either Product A, Product B, or neither product for the questions you just answered.
[SP, randomize response options]

[Prompt if Refused]

DCE_15a. When making your choices, which feature of ground beef was **most important** to you when deciding which product to buy?

1. Grass-fed cattle
2. Free from antibiotics
3. Location produced
4. Price

[SP]

DCE_15b. Which feature of ground beef was **second** most important when deciding which product to buy? *(Note: Response that was first most important will not be shown.)*

1. Grass-fed cattle
2. Free from antibiotics
3. Location produced
4. Price

[SP]

DCE_15c. Which feature of ground beef was **third** most important when deciding which product to buy? *(Note: Responses that were first and second most important will not be shown.)*

1. Grass-fed cattle
2. Free from antibiotics
3. Location produced
4. Price

[SP for each row; RANDOMIZE ORDER]

DCE_16. When grocery shopping (at a store or online), how often do you look for the following labeling claims when buying ground beef?

Format using slider

Variable Name	Labeling Claim	Never Seen the Claim	Never	Rarely	Sometimes	Most of the Time	Always
DCE_16a	Grass-fed cattle						
DCE_16b	Free from antibiotics						
DCE_16c	Product of USA						

[SP]

DCE_17. Did you purchase ground beef from the grocery store/butcher or online **within the past 6 months**?

1. Yes
0. No

DCE 3: Steak—P-USA with No Definition vs. No P-USA

[DISPLAY 8]

For the next part of the survey, imagine you are visiting a grocery store/butcher or shopping online to buy steak. In the next set of questions, we will ask you to consider two steak products. These packages of steak will differ based on the features described on the next screen.

Please take a few minutes to read this information carefully. You can go back to it if you need to by clicking the **Review Product Information** button. **[DISPLAY "Review Product Information" BUTTON FOR EACH CHOICE QUESTION]**

[DISPLAY 9]

- **Price/pound:** Dollars per 1 pound of steak. These prices typically range from $8.09 to $12.19.
- **Labeling claims:** The U.S. government reviews labeling claims producers make about their product. For example, if a producer claims that it is selling grass fed beef, the producer must show the government its products are produced from cattle mostly fed grass over their life. The survey asks about the following claims:
  - **Grass-fed:** Made from cattle mostly fed grass over their life.
  - **Free from antibiotics:** Made from cattle that were never given antibiotics during their lifetime.
  - **Product of USA:** The steak was packaged in the USA or the meat cut and then packaged in the USA. The cattle used to make the steak can come from another country or countries.

[DISPLAY 12]

It is important that we get accurate results to the survey. In prior surveys, some respondents did not consider their answers to these questions carefully. For example, in one survey, most respondents said they would buy a new product. However, when a grocery store stocked the product, only about half actually bought the new product when they had to pay for it with their own money. This can lead to misleading survey results. So, it is important that you make each of your upcoming choices like you would if you were actually making these exact choices in a grocery store/butcher or online.

Practice DCE

[DISPLAY 12A]

To start, consider Product A and Product B. Please assume they are the brand that you usually buy. Both products are packages of USDA-inspected Choice NY strip steak sold by the pound and have the same weight and expiration (sell-by) date and the same general appearance. The products are the same except for the labeling features shown on the next screen. Please carefully consider each product.

[DISPLAY 12B]

Product Features	Product A	Product B
Grass fed	No	No
Free from antibiotics	Yes	Yes
Product of USA	Yes	Yes
Price/pound	$8.09	$12.19

[SP]

[Prompt if Refused]

DCE_P. Given these two options, which package of steak would you buy?

1. Product A
2. Product B
3. Neither

[If DCE_P = Product A, then display]

[DISPLAY 13A]

In this question, each product was exactly the same except Product A cost less than Product B. You chose Product A, the option that cost less.

In the following questions, products will differ in more than one way. **Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.**

[If DCE_P = Neither or Product B]

DCE_N. Why did you choose [Pipe in answer: Product B/Neither] as your response?
[TEXT BOX]

[If DCE_P = Product B, then display]

[DISPLAY 13B]

Please read these questions carefully. In this question, each product was exactly the same except Product A cost less than Product B. However, you chose Product B, the option that cost more.

In the following questions, products will differ in more than one way. **Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.**

[If DCE_P = Neither]

Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.

DCE Questions

DCE_1 through DCE_9 [Programming note: Each respondent will see nine DCE questions according to an experimental design. Each question will resemble the

question below. Following DCE best practices, the order of attributes will be randomized.]

[Prompt if Refused for DCE1]

Product Features	Product A	Product B
Price/pound		
Free from antibiotics		
Grass fed		
Product of USA		

Given these two options, which package of steak would you buy?

1. Product A
2. Product B
3. Neither

DCE_14_FC [All respondents will see the same fixed-choice DCE question]

[Prompt if Refused]

Product Features	Product A	Product B
Price/pound	$8.09	$8.09
Free from antibiotics	Yes	Yes
Grass fed	Yes	Yes
Product of USA	Yes	No

Given these two options, which package of steak would you buy?

1. Product A
2. Product B
3. Neither

[DISPLAY 14]

The next questions ask about how important the different features of steak are to you. Please think about how you made your decision to choose either Product A, Product B, or neither product for the questions you just answered.

[SP, randomize response options]

[Prompt if Refused]

DCE_15a. When making your choices, which feature of steak was **<u>most important</u>** when deciding which product to buy?

1. Grass-fed cattle
2. Free from antibiotics
3. Product of USA
4. Price

[SP]

DCE_15b. Which feature of steak was **second** most important when deciding which product to buy? *(Note: Response that was first most important will not be shown.)*

1. Grass-fed cattle
2. Free from antibiotics
3. Product of USA
4. Price

[SP]

DCE_15c. Which feature of steak was **third** most important when deciding which product to buy? *(Note: Responses that were first and second most important will not be shown.)*

1. Grass-fed cattle
2. Free from antibiotics
3. Product of USA
4. Price

[SP FOR EACH ROW; RANDOMIZE ORDER]

DCE_16. When grocery shopping (at a store or online), how often do you look for the following labeling claims when buying steak?

Format using slider

Variable Name	Labeling Claim	Never Seen the Claim	Never	Rarely	Sometimes	Most of the Time	Always
DCE_16a	Grass-fed cattle						
DCE_16b	Free from antibiotics						
DCE_16c	Product of USA						

[SP]

DCE_17. Did you purchase steak from the grocery store/butcher or online **within the past 6 months**?

1. Yes
0. No

DCE 4: Steak—Current Definition vs. Three Alternative Definitions

[DISPLAY 8]

For the next part of the survey, imagine you are visiting a grocery store/butcher or shopping online to buy steak. In the next set of questions, we will ask you to consider two steak products. These packages of steak will differ based on the features described on the next screen.

Please take a few minutes to read this information carefully. You can go back to it if you need to by clicking the **Review Product Information** button. **[DISPLAY "Review Product Information" BUTTON FOR EACH CHOICE QUESTION]**

[DISPLAY 9]

- **Price/pound:** Dollars per 1 pound of steak. These prices typically range from $8.09 to $12.19.
- **Labeling claims:** The U.S. government reviews labeling claims producers make about their product. For example, if a producer claims that it is selling grass fed beef, the producer must show the government its products are produced from cattle mostly fed grass over their life. The survey asks about the following claims:
  - **Grass-fed:** Made from cattle mostly fed grass over their life.
  - **Free from antibiotics:** Made from cattle that were never given antibiotics during their lifetime.

[DISPLAY 10]

- **Location produced:** The beef used to make the steak can come from the USA, from another country or countries, or from both depending on where each step of the production process of the beef takes place. As shown in the figure below, the main production locations are (1) where the cattle were born, (2) where the cattle were raised, (3) where the cattle were slaughtered, and (4) where the meat was processed (packaged or cut and then packaged). Cattle can be transported to a different location to be raised, slaughtered, and/or processed.

[DISPLAY 11]

- For this survey, please consider four possible options for where the steak was produced as described below. **If a production stage is not stated, it means the animals could come from the USA or another country or countries.**

  "Processed in the USA" means the steak was packaged in the USA or cut and then packaged in the USA.

  - The steak was **processed** in the USA.
  - The steak was made from cattle that were **slaughtered** and the meat then processed all within the USA.
  - The steak was made from cattle that were **raised** and **slaughtered** and the meat then processed all within the USA.
  - The steak was made from cattle that were **born, raised, and slaughtered** and the meat then processed all within the USA.

[DISPLAY 12]

It is important that we get accurate results to this survey. In prior surveys, some respondents did not consider their answers to these questions carefully. For example, in one survey, most respondents said they would buy a new product. However, when a grocery store stocked the product, only about half actually bought the new product when they had to pay for it with their own money. This can lead to misleading survey results. So, it is important that you make each of your upcoming choices like you would if you were actually making these exact choices in a grocery store/butcher or online.

Practice DCE

[DISPLAY 12A]

To start, consider Product A and Product B. Please assume they are the brand that you usually buy. Both products are packages of USDA-inspected Choice NY strip steak sold by the pound and have the same weight and expiration (sell-by) date and the same general appearance. The products are the same except for the labeling features shown on the next screen. Please carefully consider each product.

[DISPLAY 12B]

Product Features	Product A	Product B
Grass fed	No	No
Free from antibiotics	Yes	Yes
Location produced	In the USA • Slaughtered • Processed	In the USA • Slaughtered • Processed
Price/pound	$8.09	$12.19

[SP]

[Prompt if Refused]

DCE_P. Given these two options, which package of steak would you buy?

1. Product A
2. Product B
3. Neither

[If DCE_P = Product A, then display]

[DISPLAY 13A]

In this question, each product was exactly the same except Product A cost less than Product B. You chose Product A, the option that cost less.

In the following questions, products will differ in more than one way. **Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.**

[If DCE_P = Neither or Product B]

DCE_N. Why did you choose [Pipe in answer: Product B/Neither] as your response?

[TEXT BOX]

[If DCE_P = Product B, then display]

[DISPLAY 13B]

Please read these questions carefully. In this question, each product was exactly the same except Product A cost less than Product B. However, you chose Product B, the option that cost more.

In the following questions, products will differ in more than one way. **Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.**

[If DCE_P = Neither]

Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.

DCE Questions

DCE_1 through DCE_9 [Programming note: Each respondent will see nine DCE questions according to an experimental design. Each question will resemble the question below. Following DCE best practices, the order of attributes in the DCE question will be randomized.]

[Prompt if Refused for DCE1]

Product Features	Product A	Product B
Price/pound		
Free from antibiotics		

Product Features	Product A	Product B
Grass fed		
Location produced		

Given these two options, which package of steak would you buy?

1. Product A
2. Product B
3. Neither

[DISPLAY 14]

The next questions ask about how important the different features of steak are to you. Please think about how you made your decision to choose either Product A, Product B, or neither product for the questions you just answered.

[SP, randomize response options]

[Prompt if Refused]

DCE_15a. When making your choices, which feature of steak was **most important** to you when deciding which product to buy?

1. Grass-fed cattle
2. Free from antibiotics
3. Location produced
4. Price

[SP]

DCE_15b. Which feature of steak was **second** most important when deciding which product to buy? *(Note: Response that was first most important will not be shown.)*

1. Grass-fed cattle
2. Free from antibiotics
3. Location produced
4. Price

[SP]

DCE_15c. Which feature of steak was **third** most important when deciding which product to buy? *(Note: Responses that were first and second most important will not be shown.)*

1. Grass-fed cattle
2. Free from antibiotics
3. Location produced
4. Price

[SP for each row; RANDOMIZE ORDER]

DCE_16. When grocery shopping (at a store or online), how often do you look for the following labeling claims when buying steak?

Format using slider

Variable Name	Labeling Claim	Never Seen the Claim	Never	Rarely	Sometimes	Most of the Time	Always
DCE_16a	Grass-fed cattle						
DCE_16b	Free from antibiotics						
DCE_16c	Product of USA						

[SP]

DCE_17. Did you purchase steak from the grocery store/butcher or online **within the past 6 months**?

1. Yes
0. No

DCE 5: Pork Tenderloin—P-USA with No Definition vs. No P-USA

[SKIP DCE 5 IF S3 = 0 (NO) FOR PORK; GO TO SD3]

[DISPLAY 8]

For the next part of the survey, imagine you are visiting a grocery store/butcher or shopping online to buy pork tenderloin. In the next set of questions, we will ask you to consider two pork tenderloin products. These packages of pork tenderloin will differ based on the features described on the next screen.

Please take a few minutes to read this information carefully. You can go back to it if you need to by clicking the **Review Product Information** button. **[DISPLAY "Review Product Information" BUTTON FOR EACH CHOICE QUESTION]**

[DISPLAY 9]

- **Price/pound:** Dollars per 1 pound of pork tenderloin. These prices typically range from $2.89 to $5.19.

  Labeling claims: The U.S. government reviews labeling claims producers make about their product. For example, if a producer claims that it is selling pork free from added hormones, the producer must show the government that its products are produced without added hormones. The survey asks about the following claims:

  - **Free from added hormones:** Made from hogs that were never given artificial hormones during their lifetime.
  - **Lean:** The product contains limited amounts of fat, saturated fat, and cholesterol.
  - **Product of USA:** The pork tenderloin was packaged in the USA or the meat cut and then packaged in the USA. The hogs used to make the pork tenderloin can come from another country or countries.

[DISPLAY 12]

It is important that we get accurate results to the survey. In prior surveys, some respondents did not consider their answers to these questions carefully. For example, in one survey, most respondents said they would buy a new product. However, when a grocery store stocked the product, only about half actually bought the new product when they had to pay for it with their own money. This can lead to misleading survey results. So, it is important that you make each of your upcoming choices like you would if you were actually making these exact choices in a grocery store/butcher or online.

Practice DCE

[DISPLAY 12A]

To start, consider Product A and Product B. Please assume they are the brand that you usually buy. Both products are packages of USDA-inspected pork tenderloin that are not in a marinade and have the same weight and expiration (sell-by) date and the same general appearance. The products are the same except for the labeling features shown on the next screen. Please carefully consider each product.

[DISPLAY 12B]

Product Features	Product A	Product B
Price/pound	$2.89	$5.19
Free from added hormones	No	No
Lean	Yes	Yes
Product of USA	No	No

[SP]

[Prompt if Refused]

DCE_P. Given these two options, which package of pork tenderloin would you buy?

1. Product A
2. Product B
3. Neither

[If DCE_P = Product A, then display]

[DISPLAY 13A]

In this question, each product was exactly the same except Product A cost less than Product B. You chose Product A, the option that cost less.

In the following questions, products will differ in more than one way. **Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.**

[If DCE_P = Neither or Product B]

DCE_N. Why did you choose [Pipe in answer: Product B/Neither] as your response?

[TEXT BOX]

[If DCE_P = Product B, then display]

[DISPLAY 13B]

Please read these questions carefully. In this question, each product was exactly the same except Product A cost less than Product B. However, you chose Product B, the option that cost more.

In the following questions, products will differ in more than one way. **Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.**

[If DCE_P = Neither]

Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.

DCE Questions

DCE_1 through DCE_9 [Programming note: Each respondent will see nine DCE questions according to an experimental design. Each question will resemble the question below. Following DCE best practices, the order of attributes will be randomized.]

[Prompt if Refused for DCE1]

Product Features	Product A	Product B
Price/pound		
Free from added hormones		
Lean		
Product of USA		

Given these two options, which package of pork tenderloin would you buy?

1. Product A
2. Product B
3. Neither

DCE_14_FC [All respondents will see the same fixed-choice DCE question]

[Prompt if Refused]

Product Features	Product A	Product B
Price/pound	$2.89	$2.89
Free from added hormones	Yes	Yes
Lean	Yes	Yes
Product of USA	Yes	No

Given these two options, which package of pork tenderloin would you buy?

1. Product A
2. Product B
3. Neither

[DISPLAY 14]

The next questions ask about how important the different features of pork tenderloin are to you. Please think about how you made your decision to choose either Product A, Product B, or neither product for the questions you just answered.

[SP, randomize response options]

[Prompt if Refused]

DCE_15a. When making your choices, which feature of pork tenderloin was **most important** to you when deciding which product to buy?

1. Lean

2. Free from added hormones
3. Product of USA
4. Price

[SP]

DCE_15b. Which feature of pork tenderloin was **second** most important when deciding which product to buy? *(Note: Response that was first most important will not be shown.)*

1. Lean
2. Free from added hormones
3. Product of USA
4. Price

[SP]

DCE_15c. Which feature of pork tenderloin was **third** most important when deciding which product to buy? *(Note: Responses that were first and second most important will not be shown.)*

1. Lean
2. Free from added hormones
3. Product of USA
4. Price

[SP FOR EACH ROW; RANDOMIZE ORDER]

DCE_16. When grocery shopping (at a store or online), how often do you look for the following labeling claims when buying pork tenderloin?

Variable Name	Labeling Claim	Never Seen the Claim	Never	Rarely	Sometimes	Most of the Time	Always
DCE_16a	Lean						
DCE_16b	Free from added hormones						
DCE_16c	Product of USA						

[SP]

DCE_17. Did you purchase pork tenderloin from the grocery store/butcher or online **within the past 6 months**?

1. Yes
0. No

DCE 6: Pork Tenderloin—Current Definition vs. Three Alternative Definitions

[SKIP DCE 6 IF S3 = 0 (NO) FOR PORK; GO TO SD3]

[DISPLAY 8]
For the next part of the survey, imagine you are visiting a grocery store/butcher or shopping online to buy pork tenderloin. In the next set of questions, we will ask you to consider two pork tenderloin products. These packages of pork tenderloin will differ based on the features described on the next screen.

Please take a few minutes to read this information carefully. You can go back to it if you need to by clicking the **Review Product Information** button. **[DISPLAY "Review Product Information" BUTTON FOR EACH CHOICE QUESTION]**

[DISPLAY 9]

- **Price/pound:** Dollars per 1 pound of pork tenderloin. These prices typically range from $2.89 to $5.19.

  Labeling claims: The U.S. government reviews labeling claims producers make about their product. For example, if a producer claims that it is selling pork free from added hormones, the producer must show the government that its products are produced without added hormones. The survey asks about the following claims:

  – **Free from added hormones:** Made from hogs that were never given artificial hormones during their lifetime.

  – **Lean:** The product contains limited amounts of fat, saturated fat, and cholesterol.

[DISPLAY 10]

- **Location produced:** The pork used to make pork tenderloin can come from the USA, from another country or countries, or from both depending on where each step of the production process of the pork takes place. As shown in the figure below, the main production locations are (1) where the hogs were born, (2) where the hogs were raised, (3) where the hogs were slaughtered, and (4) where the meat was processed (packaged or cut and then packaged). Hogs can be transported to a different location to be raised, slaughtered, and/or processed.

[DISPLAY 11]

- For this survey, please consider four possible options for where the pork tenderloin was produced as described below. **If a production stage is not stated, it means the animals could come from the USA or another country or countries.**

  "Processed in the USA" means the pork tenderloin was packaged in the USA or cut and then packaged in the USA.

  - The pork tenderloin was **processed** in the USA.
  - The pork tenderloin was made from hogs that were **slaughtered** and the meat then processed all within the USA.
  - The pork tenderloin was made from hogs that were **raised** and **slaughtered** and the meat then processed all within the USA.
  - The pork tenderloin was made from hogs that were **born, raised, and slaughtered** and the meat then processed all within the USA.

[DISPLAY 12]

It is important that we get accurate results to the survey. In prior surveys, some respondents did not consider their answers to these questions carefully. For example, in one survey, most respondents said they would buy a new product. However, when a grocery store stocked the product, only about half actually bought the new product when they had to pay for it with their own money. This can lead to misleading survey results. So, it is important that you make each of your upcoming choices like you would if you were actually making these exact choices in a grocery store/butcher or online.

Practice DCE

[DISPLAY 12A]

To start, consider Product A and Product B. Please assume they are the brand that you usually buy. Both products are packages of USDA-inspected pork tenderloin that are not in a marinade and have the same weight and expiration (sell-by) date and the same general appearance. The products are the same except for the labeling features shown on the next screen. Please carefully consider each product.

[DISPLAY 12B]

Product Features	Product A	Product B
Price/pound	$2.89	$5.19
Free from added hormones	No	No
Lean	Yes	Yes
Location produced	In the USA • Slaughtered • Processed	In the USA • Slaughtered • Processed

[SP]

[Prompt if Refused]

DCE_P. Given these two options, which package of pork tenderloin would you buy?

1. Product A
2. Product B
3. Neither

[If DCE_P = Product A, then display]

[DISPLAY 13A]

In this question, each product was exactly the same except Product A cost less than Product B. You chose Product A, the option that cost less.

In the following questions, products will differ in more than one way. **Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.**

[If DCE_P = Neither or Product B]

DCE_N. Why did you choose [Pipe in answer: Product B/Neither] as your response?

[TEXT BOX]

[If DCE_P = Product B, then display]

[DISPLAY 13B]

Please read these questions carefully. In this question, each product was exactly the same except Product A cost less than Product B. However, you chose Product B, the option that cost more.

In the following questions, products will differ in more than one way. **Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.**

[If DCE_P = Neither]

Please look very carefully at each product and consider which option you would actually buy as if you were making the purchases using your own money.

DCE Questions

DCE_1 through DCE_9 [Programming note: Each respondent will see nine DCE questions according to an experimental design. Each question will resemble the question below. Following DCE best practices, the order of attributes will be randomized.]

[Prompt if Refused for DCE1]

Product Features	Product A	Product B
Price/pound		
Free from added hormones		
Lean		

Product Features	Product A	Product B
Location produced		

Given these two options, which package of pork tenderloin would you buy?

1. Product A
2. Product B
3. Neither

[DISPLAY 14]

The next questions ask about how important the different features of pork tenderloin are to you. Please think about how you made your decision to choose either Product A, Product B, or neither product for the questions you just answered.

[SP, randomize response options]

[Prompt if Refused]

DCE_15a. When making your choices, which feature of pork tenderloin was **most important** to you when deciding which product to buy?

1. Lean
2. Free from added hormones
3. Location produced
4. Price

[SP]

DCE_15b. Which feature of pork tenderloin was **second** most important when deciding which product to buy? *(Note: Response that was first most important will not be shown.)*

1. Lean
2. Free from added hormones
3. Location produced
4. Price

[SP]

DCE_15c. Which feature of pork tenderloin was **third** most important when deciding which product to buy? *(Note: Responses that were first and second most important will not be shown.)*

1. Lean
2. Free from added hormones
3. Location produced
4. Price

[SP FOR EACH ROW; RANDOMIZE ORDER]

DCE_16. When grocery shopping (at a store or online), how often do you look for the following labeling claims when buying pork tenderloin?

Format using slider

Variable Name	Labeling Claim	Never Seen the Claim	Never	Rarely	Sometimes	Most of the Time	Always
DCE_16a	Lean						
DCE_16b	Free from added hormones						
DCE_16c	Product of USA						

[SP]

DCE_17. Did you purchase pork tenderloin from the grocery store/butcher or online **within the past 6 months**?

1. Yes
0. No

SD3. [OPEN TEXT FIELD] Thank you for completing the survey! Please provide any other comments in the box below.

END. You have finished the survey. We have successfully received your responses.

Appendix B:
Recruitment Procedures for the KnowledgePanel

Since its inception in 1999, the KnowledgePanel has recruited participants based on industry standards for probability-based general population surveys. In the past, the panel relied on random-digit dialing (RDD) for recruitment. Currently, recruitment is primarily through address-based sampling (ABS). The ABS methodology is a random sample of addresses from the U.S. Postal Service's Delivery Sequence File (DSF). A residential household with at least one adult who is 18 years of age or older is considered an "eligible household." Individuals residing at randomly sampled addresses are invited to join the KnowledgePanel through a series of mailings (in English and Spanish); nonresponders are phoned when a telephone number can be matched to the sampled address. Noninternet households are provided a web-enabled tablet and free internet access. Historical recruitment rates for participation in the panel are approximately 15% to 20%.

The KnowledgePanel's probability-based recruitment was originally based exclusively on a national RDD frame. In April 2009, in response to the growing number of cell phone–only households that are outside of the RDD frame, Ipsos migrated to using an ABS frame for selecting panel members. Most recently, approximately 10% of panel members were recruited through RDD methodology, while 90% were recruited using an ABS methodology. As previously noted, for both ABS and RDD recruitment, households without an internet connection are provided with a web-enabled device and free internet service. After initially accepting the invitation to join the panel, participants are asked to complete a short demographic survey (the initial profile survey); answers to these questions allow efficient panel sampling and weighting for surveys. Completion of the profile survey allows participants to become panel members. These procedures were established for the RDD-recruited panel members and continued with ABS-recruited panel members. Respondents sampled from the RDD and ABS frames are provided the same privacy terms and confidentiality protections.

ABS involves probability-based sampling of addresses from the U.S. Postal Service's DSF. The key advantage of the ABS sample frame is that it allows sampling of almost all U.S. households and improves population coverage—an estimated 97% of households are "covered" in sampling nomenclature. Regardless of household telephone status, those households can be reached and contacted through postal mail. The stratification plan for the ABS design shifts and evolves with time and currently leverages a combination of geographic oversampling and demographic oversampling, for example, slightly oversampling rural households and those likely to have a young adult. The stratification relies on ancillary information that has been appended to the DSF by sample providers that includes a mix of commercial databases and Census data. Ipsos regularly reviews the

stratification methodology, adjusting it as needed based on panel needs and differential response and attrition rates.

Randomly sampled addresses are invited to join the KnowledgePanel through a series of mailings, including an initial invitation letter, a reminder postcard, and a subsequent follow-up letter. Approximately 40% of the physical addresses selected for the sample can be matched to a corresponding valid telephone number. About 5 weeks after the initial mailing, telephone refusal-conversion calls are made to households for whom a telephone number was matched to the sampled address. Invited households can join the panel by (1) completing and mailing back a paper form in a postage-paid envelope, (2) calling a toll-free hotline phone number maintained by Ipsos, or (3) going to a designated Ipsos website and completing the recruitment form at the website.

On average, panel members are invited to complete one survey per week and complete three to four surveys per month. Typical survey durations are 10 to 15 minutes per survey. Panelists are proactively withdrawn from the panel after nonresponse to numerous consecutive survey invitations.

Appendix C:
Panel Recruitment Stage Sampling for the KnowledgePanel

There are two aspects of sampling for the KnowledgePanel: one occurs at the panel recruitment stage and the other occurs at the survey sampling stage.

Panel Recruitment Stage. Once panel members are recruited and profiled by completing the Core Profile Survey, they become eligible for selection for client surveys. Typically, specific survey samples are based on an equal probability selection method (EPSEM) for general population surveys. With this approach, all subsequent survey samples drawn that week are selected so that the resulting sample remains representative of the population distributions.

For selection of general population samples from the KnowledgePanel, a patented methodology has been developed such that samples from the panel behave as EPSEM samples. Briefly, this methodology starts by weighting the pool of active members to the geodemographic benchmarks secured from a combination of the U.S. Census Bureau's American Community Survey (ACS) and the March 2022 supplement of the U.S. Census Bureau's Current Population Survey (CPS) along several dimensions. The geodemographic dimensions used for weighting the entire KnowledgePanel include the following dimensions, with additional nesting of dimensions as well:

- Gender (male/female)
- Age (18–29, 30–44, 45–59, and 60+)
- Race/Hispanic ethnicity (White/non-Hispanic, Black/non-Hispanic, other/non-Hispanic, 2+ races/non-Hispanic, Hispanic)
- Education (less than high school, high school, some college, bachelor's and beyond)
- Census Region (Northeast, Midwest, South, West)
- Household income (under $10 K, $10K to <$25 K, $25K to <$50 K, $50K to <$75 K, $75K to <$100K, $100K to <$150K, and $150K+)
- Home ownership status (own, rent/other)
- Household size (1, 2, 3, 4+)
- Metropolitan Area (yes, no)
- Hispanic origin (Mexican, Puerto Rican, Cuban, other, non-Hispanic)
- Language dominance (non-Hispanic and English-dominant, bilingual, and Spanish-dominant Hispanic) when the survey is administered in both English and Spanish, which was the case for this study

Survey Sampling Stage. Using the resulting weights as measures of size, Ipsos employs a probability-proportional-to-size (PPS) procedure to select study-specific samples. It is the application of this PPS methodology with the imposed size measures that produces

demographically balanced and representative samples that behave as EPSEM. Moreover, in instances where a study design requires any form of oversampling of certain subgroups (e.g., Spanish-speaking individuals), such departures from an EPSEM design are accounted for by adjusting the design weights in reference to the Census benchmarks for the population of interest.

Appendix D:
Statistical Methodology Weighting Procedures for the KnowledgePanel

Ipsos uses a two-step weighting procedure to calculate the final survey weights. In the first step, design weights for all KnowledgePanel survey assignees (i.e., panelists selected for the "Product of USA" survey) were computed to reflect their selection probabilities and the oversample of Spanish survey takers. In the second step, the design weights for all KnowledgePanel screened respondents were raked to the following geodemographic distributions of the age 18 years or older U.S. population. Benchmarks were obtained from the 2021 March supplement of the Current Population Survey (CPS) except for language dominance, which is not available from the CPS and was obtained from the 2019 American Community Survey (ACS).

- Age (18–29, 30–44, 45–59, 60+) by gender (male, female)
- Race/ethnicity (White/non-Hispanic, Black/non-Hispanic, other/non-Hispanic, Hispanic, 2+ races/non-Hispanic)
- Census region (Northeast, Midwest, South, West) by metropolitan status (metro, non-metro)
- Education (less than high school, high school, some college, bachelor's or higher)
- Household income (under $25K, $25K-$49,999, $50K-$74,999, $75K-$99,999, $100K-$149,999, $150K and over)
- Language dominance (English-dominant Hispanic, bilingual Hispanic, Spanish-dominant Hispanic, non-Hispanic)

The resulting weights were scaled to sum to the total number of screened cases (n = 7,165). The final survey weights (labeled as "weight" in the analysis dataset) were scaled to sum to the total number of eligible respondents (n = 4,834). Ipsos provided a de-identified dataset with the experimental data, survey responses, and final survey weights to RTI for analysis.

Appendix E:
Mixed Logit Results

Table E.1. Mixed Logit Results for Ground Beef Models

		DCE 1 "Product of USA" vs. No "Product of USA" (*n* = 522)		DCE 2 Four Definitions of "Product of USA" (*n* = 527)	
Attribute	**Levels**	**Coefficient (SE)**	**Standard Deviation (SE)**	**Coefficient (SE)**	**Standard Deviation (SE)**
Price[a]	$/lb	−1.09 (0.08)	0.46 (0.10)	−1.21 (0.11)	1.05 (0.17)
Free from antibiotics[b]	Yes	1.08 (0.09)	0.92 (0.07)	0.70 (0.06)	0.63 (0.05)
	No[c]	−1.08		−0.70	
Grass fed[b]	Yes	0.44 (0.05)	0.38 (0.08)	0.31 (0.04)	0.43 (0.07)
	No[c]	−0.44		−0.31	
"Product of USA"[b]	Yes	0.92 (0.07)	0.96 (0.08)	N/A	N/A
	No[c]	−0.92		N/A	
Location produced[b]	Processed in USA	N/A	N/A	−0.70 (0.07)	0.08 (0.21)
	Slaughtered and processed in USA	N/A	N/A	0.34 (0.06)	0.17 (0.09)
	Raised, slaughtered, and processed in USA[c]	N/A	N/A	0.34	N/A
	Born, raised, slaughtered, and processed in USA	N/A	N/A	0.70 (0.06)	0.01 (0.04)
Neither		−7.56 (0.56)	3.18 (0.36)	−11.97 (0.98)	6.98 (0.69)

Source: "Product of USA" Web-Based Survey/Experiment, August 2022.

[a] Coded as continuous variable.

[b] Effects coded variable.

[c] Variable omitted from model.

Notes: Model estimates in this table were incorporated with the formulas presented in Section 2.5.3 to obtain marginal WTP results. Model estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights. N/A = not applicable for this model specification; SE = standard error.

Table E.2. Mixed Logit Results for NY Strip Steak Models

		DCE 3 "Product of USA" vs. No "Product of USA" (*n* = 507)		DCE 4 Four Definitions of "Product of USA" (*n* = 477)	
Attribute	**Levels**	**Coefficient (SE)**	**Standard Deviation (SE)**	**Coefficient (SE)**	**Standard Deviation (SE)**
Price[a]	$/lb	−0.59 (0.04)	0.24 (0.05)	−0.50 (0.04)	0.39 (0.06)
Free from antibiotic[b]	Yes	1.21 (0.11)	1.13 (0.09)	0.89 (0.06)	0.76 (0.06)
	No[c]	−1.21		−0.89	
Grass fed[b]	Yes	0.42 (0.05)	−0.53 (0.07)	0.34 (0.03)	0.20 (0.09)
	No[c]	−0.42		−0.34	
"Product of USA"[b]	Yes	0.94 (0.07)	0.87 (0.07)	N/A	N/A
	No[c]	−0.94			
Location produced[b]	Processed in USA	N/A	N/A	−0.96 (0.07)	0.36 (0.14)
	Slaughtered and processed in USA	N/A	N/A	−0.35 (0.06)	0.08 (0.25)
	Raised, slaughtered, and processed in USA[c]	N/A	N/A	0.45	N/A
	Born, raised, slaughtered, and processed in USA	N/A	N/A	0.86 (0.07)	0.03 (0.07)
Neither		−9.20 (0.80)	4.09 (0.50)	−13.16 (1.30)	6.75 (0.72)

Source: "Product of USA" Web-Based Survey/Experiment, August 2022.

[a] Coded as continuous variable.

[b] Effects coded variable.

[c] Variable omitted from model.

Notes: Model estimates in this table were incorporated with the formulas presented in Section 2.5.3 to obtain marginal WTP results. Model estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights. N/A = not applicable for this model specification; SE = standard error.

Table E.3. Mixed Logit Results for Pork Tenderloin Models

		DCE 5 "Product of USA" vs. No "Product of USA" (*n* = 370)		DCE 6 Four Definitions of "Product of USA" (*n* = 330)	
Attribute	**Levels**	**Coefficient (SE)**	**Standard Deviation (SE)**	**Coefficient (SE)**	**Standard Deviation (SE)**
Price[a]	$/lb	−1.00 (0.07)	0.29 (0.12)	−0.93 (0.08)	0.87 (0.08)
Free from added hormones[b]	Yes	1.16 (0.12)	1.13 (0.10)	0.80 (0.07)	0.73 (0.08)
	No[c]	−1.16		−0.80	
Lean[b]	Yes	0.69 (0.07)	0.67 (0.09)	0.42 (0.05)	0.37 (0.08)
	No[c]	−0.69		−0.42	
"Product of USA"[b]	Yes	0.86 (0.08)	0.76 (0.08)	N/A	N/A
	No[c]	−0.86		N/A	
Location produced	Processed in USA	N/A	N/A	−0.79 (0.08)	0.31 (0.15)
	Slaughtered and processed in USA	N/A	N/A	−0.32 (0.07)	0.17 (0.16)
	Raised, slaughtered, and processed in USA[c]	N/A	N/A	0.37	N/A
	Born, raised, slaughtered, and processed in USA	N/A	N/A	0.74 (0.08)	0.03 (0.04)
Neither		−6.38 (0.56)	3.68 (0.44)	−7.76 (0.58)	5.33 (0.49)

Source: "Product of USA" Web-Based Survey/Experiment, August 2022.

[a] Coded as continuous variable.

[b] Effects coded variable.

[c] Variable omitted from model.

Notes: Model estimates in this table were incorporated with the formulas presented in Section 2.5.3 to obtain marginal WTP results. Model estimates were weighted to represent the population of adult primary grocery shoppers who have purchased beef or pork within the past 6 months using the final survey weights. N/A = not applicable for this model specification; SE = standard error.