WellBeing International

WBI Studies Repository

1-23-2019

What To Call Plant-Based Meat Alternatives: A Labeling Study

Jo Anderson
Faunalytics

Follow this and additional works at: https://www.wellbeingintlstudiesrepository.org/hw_diet

What To Call Meat Alternatives:
A Labeling Study

January 2019

Author: Jo Anderson

Faunalytics

Contents

(Click to go to page)

Background

Over the past few years, describing products as *vegan* has increasingly been considered a bad idea. For example, industry leaders have recommended that companies avoid using "v-words" on their meat-free products (Food Navigator, 2018).

This perception is based on studies showing that, for instance:

- Putting meat-free options in a separate "vegetarian" section of your menu reduces sales (Bacon & Krpan, 2018);

- The word "vegan" reduces foods' appeal for more consumers than other common labels like "diet," "sugar-free," or "gluten-free" (Newsweek, 2018).

The term "plant-based" has been widely adopted as an alternative to "vegan" and "vegetarian" (Christian Science Monitor, 2018). There are good theoretical reasons for this move: The term focuses on what a product contains rather than what it lacks, and it doesn't have the baggage associated with veganism. However, not much research has examined the relative merits of the terms "plant-based" and "vegan."

A poll of 1,163 social media users suggested that *plant-based* might be perceived more positively and as more of a dietary choice than a lifestyle choice (Food Navigator, 2018), which provided encouragement for the adoption of the term.

However, to our knowledge, Faunalytics' current project is the first to rigorously compare these terms and others using validated scientific methodology and a nationally representative sample of consumers.

Project Overview

In this three-phase project, we started off by crowd-sourcing a list of potential terms for meat alternatives. We then narrowed the list of suggestions down to 20 and tested them for appeal with meat consumers on Mechanical Turk. The terms included options like *direct protein, harmless,* and *eco.* We also included *vegan* and *plant-based.* Participants rated how good each product label sounded to them and indicated how likely they were to buy it.

In the third and final phase of this project, a large, nationally representative sample of participants made direct, head-to-head comparisons between the eight best performers from the second phase of the study.

Together, these three phases of research give us a strong idea of people's preferences for the different labels.

Key Findings

1. **The average person preferred the label *vegan* over *plant-based* (and most other options!):** Counter to commonly held assumptions, consumers said that a vegan burger sounded better than a plant-based burger in a head-to-head comparison. In fact, only *feel-good* outperformed *vegan* as a label.

2. **All labels were rated similarly and neutrally on measures of sound and likelihood of purchase.** When considered individually, the eight labels were rated neutrally on average. In a head-to-head comparison, the term *plant-based* rated lower than all other descriptors we tested, including *vegan*. Given the increasing adoption of *plant-based* as the term of choice, we hope that this finding will inspire careful review of when and how it should be used in marketing. That said, some of the other terms (e.g., *feel-good*) are more general and less objectively descriptive than *plant-based*. More research with other methodologies and target products is needed, but this study suggests that labeling a product simply as *plant-based* may appeal to a smaller segment of consumers than many other options, notably including *vegan*.

3. ***Feel-good* was the most positively rated term.** The success of this broadly positive label suggests playing up the ability of meat-free eating to make a person feel good. In a domain steeped with health and morality messaging, adding a broader, positivity-based approach may be successful with a large number of people.

4. **To appeal to men, avoid *vegan* and *plant-based*.** Products targeting men—especially young men—should avoid these standard terms. By contrast, the label *direct protein* showed more promise with men. Using terms like that—or avoiding labels altogether (as some companies have been choosing to do recently)—may be the most successful approach for appealing to young men.

5. **Older adults like *zero cholesterol*.** Although it didn't perform well across the full sample, *zero cholesterol* held significant appeal for older adults. This suggests that messaging targeting this group could benefit from focusing on this very specific benefit of eating food free of animal products.

6. **We need a range of strategies to appeal to a range of consumers.** As the findings above suggest, there is no one-size-fits-all approach to labeling. For advocates, this means targeting your messages to specific groups. For marketers, as more and more companies manufacture animal product alternatives, they can target different niches. A wide range of strategies may be the best strategy.

Funding Acknowledgement

Future Analyses

This report covers a lot of results, but it is not exhaustive. Over the next few months, Faunalytics will be conducting a few additional analyses. These will include a more detailed look at how taste ratings differ by label, as well as an examination of the animal product alternatives eaten by people with different diets.

Phase 1: Sourcing Terms

In the first stage of this project, we crowd-sourced a list of potential terms for meat alternatives using a Facebook convenience sample largely made up of meat-eaters. We received 107 responses from 37 individuals.

The research team refined this list by removing duplicate and very similar responses, as well as responses that did not provide specific suggestions, leaving 27 options.

We considered all responses from the brainstorming session in light of their possible positive and negative associations, as well as their ability to convey the source or benefits of the product. Using these criteria, and striving to include a wide range of options, we narrowed the list of terms to 20 to include in Phase 2: *clean, direct protein, earth-based, earth powered, eco, enlightened, feel-good, future, harmless, kojo* (kōjō is Japanese for "plant")*, longevity, mindful, planet friendly, plant forward, plant powered, plant strong, plantiful, sun powered, sustainable,* and *zero cholesterol.*

Phase 2: Sound And Likelihood Of Purchase

Phase 2 Sample And Method

In the second stage of the project, the list of 20 terms was subjected to more rigorous testing. After excluding duplicates and people who failed an attention check, the sample included 565 participants from Amazon's Mechanical Turk.

Methodological note: Each participant rated half of the new terms, which means the study had better than 80% power to detect even small differences (dz = .20) between the labels in the full sample. The power to detect differences within subgroups is lower, but this study provides a general sense of the patterns, which we used to make predictions for Phase 3.

First, participants were randomly assigned to either see or not see a short description of the characteristics and benefits of plant-based foods. However, reading this preamble did not significantly affect the average responses for any of the labels, so this is not discussed further (the preamble can be seen in the survey instrument).

Then, all participants were presented with mock-ups of 12 plant-based products (examples are shown in Figure 1). Ten of the products had a randomly determined label from the full list of 20. The other two products, which everyone rated for benchmarking purposes, were labeled *vegan* and *plant-based*. Each product was randomly assigned a type for each participant: cheese slices, chicken nuggets, and burgers. Thus, each participant saw a mix of these three product types and 12 different labels.

Figure 1. Product Mock-Ups.

Products were presented one at a time, in random order. Participants were asked two questions about each product:

- "Imagine this product is widely available at grocery stores, restaurants, and markets. How likely are you to try it?"
  (rated on a 5-point scale from *not at all likely* to *extremely likely*); and

- "How good or bad does this product sound to you?"
  (rated on a 7-point scale from *extremely bad* to *extremely good*)

At the end of the survey, participants were given a basic Food Frequency Questionnaire (FFQ) to determine whether they consume animal products and/or animal product replacements, and several demographic questions.

Phase 2 Results

Our target audience was people who currently eat meat, so vegans and vegetarians ($n = 35$) were excluded from the analyses.

Figures 2 and 3 below show the average sound and likelihood of trying the product for each label.
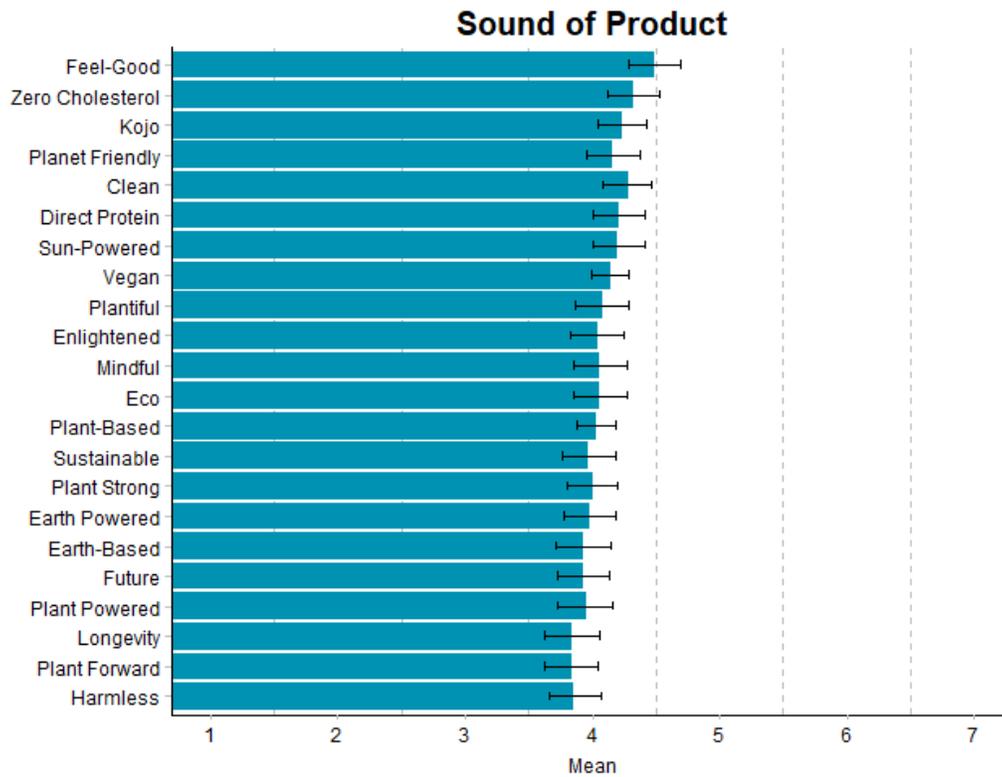
Sound of Product

Notes. This scale ranged from 1, *extremely bad,* to 7, *extremely good,* with a neutral midpoint of 4. The error bars show the 95% confidence interval for each estimate.

Figure 2. Sound Of The Product.

Likelihood of Trying Product
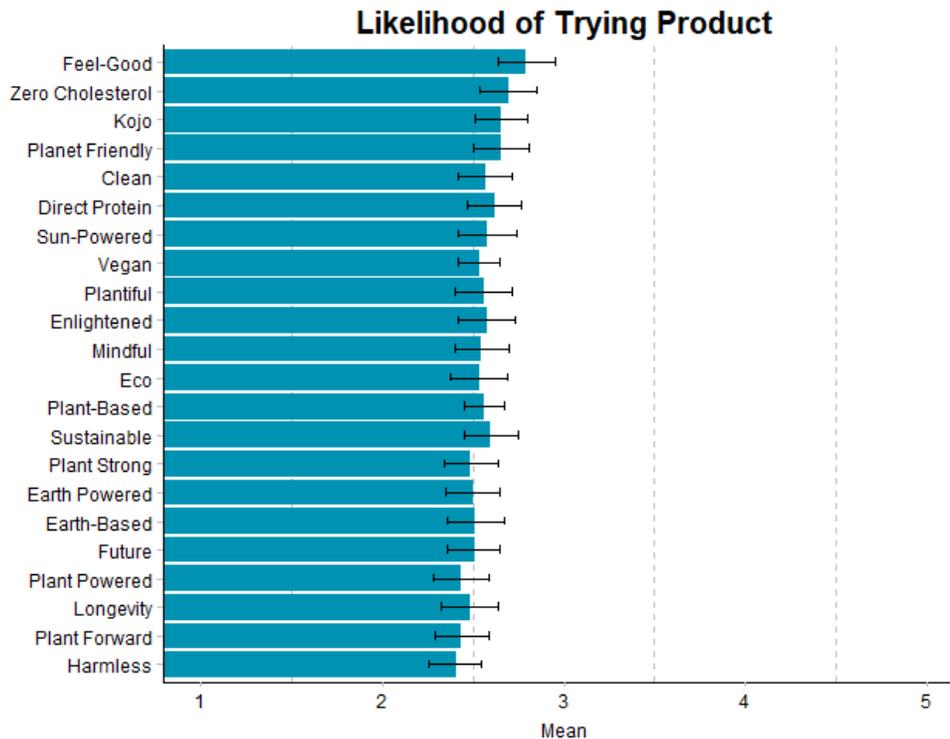
Note. This scale ranged from 1, *not at all likely*, to 5, *extremely likely,* with a midpoint of 3 (*moderately likely*). The error bars show the 95% confidence interval for each estimate.

Figure 3. Likelihood Of Trying The Product.

Methodological note: For the analyses comparing these labels, we standardized and averaged the sound and likelihood items to give them equal weight. Results presented this way are available in the Supplementary Materials.

As you can see in the graphs above, the labels were rated quite similarly overall. *Feel-good* scored significantly better than *vegan* and *plant-based* (p = .005 and p = .002, respectively), but no other differences attained statistical significance.

With scores of 4.1 and 4.0, respectively, *vegan* and *plant-based* were rated as sounding "neither bad nor good" on average. And scores of 2.5 and 2.6 on the other scale mean that the average person is between "slightly likely" and "moderately likely" to try them: not exceptionally positive, but not bad either, considering these are all meat consumers.

We also computed the averages for demographic subgroups. They can be found with our pre-registration for Phase 3 because we used those patterns to inform our hypotheses. However, we did not conduct significance tests because of the small sample sizes and number of comparisons—the results for subgroups from Phase 2 should be considered very exploratory.

Phase 3: Head-To-Head Comparisons

The third and final phase of this project pitted the most promising labels against each other in a head-to-head comparison, like seeing them next to each other in the freezer section at the grocery store. This time, for ease of interpretation, we focused on the most widely known and accepted meat-free product: the veggie burger. To ensure that packaging couldn't overshadow the labels, we also stuck to text rather than product mock-ups for the comparisons.

This study included two standard labels—*vegan* and *plant-based*—as well as the six highest-scoring labels from the second phase: *clean, direct protein, feel-good, kojo, planet friendly,* and *zero cholesterol.* (It is worth noting, again, that only *feel-good* was rated significantly higher than *vegan* and *plant-based.*)

Phase 3 Sample And Method

Data were collected in October/November 2018. A census-balanced, representative sample of U.S. adults was recruited through the research firm Toluna. After excluding duplicates and people who failed an attention check, the sample included 1,431.

As in the second phase of research, analyses were conducted on people who consume meat only (*n* = 1,383; 48 veg*ns removed). This is more than the 1,340 that we planned for in our [pre-registered power analysis](#), meaning that our regression analyses have better than 99% power to detect effects. In other words, we can be very confident that the results would be the same if the study were run again.

For this study, we were most interested in the differences in how terms are perceived. To assess these differences, we used a pairwise comparison technique created by [Oishi, Schimmack, Diener, & Suh (1998)](#) that has since been used in other research (e.g., [Sheldon, Elliot, Kim, & Kasser, 2001](#)).

In this method, participants were asked to make a series of quick pairwise comparisons between all possible pairs of labels (28 comparisons in total). The order of the pairs was randomized, as was the left-right presentation of each pair. Participants were given five response options per choice. For example:

Which meat-free burger sounds better to you?

Direct Protein Burgers **or** **Vegan Burgers**

| ○ First sounds much better | ○ First sounds a bit better | ○ They sound about equal | ○ Second sounds a bit better | ○ Second sounds much better |

Each pairwise response provides two scores between -2 and +2: one per label. In the example above, choosing "second sounds a bit better" would score +1 for *vegan* and -1 for *direct protein*. Each label appears seven times (once with every other label). Therefore, each participant will have an overall preference score for each of the eight labels that ranges from -14 to +14.

Methodological note: This method eliminates the influence of response bias because the method focuses on relative preference, and each participant's average score will be 0 by design. In addition, because every participant compares every pair of labels, there is no missing data to contend with, which prevents the design itself from introducing bias.

Next, participants rated each label using product mock-ups. They rated each product label for impact on animals, environmental friendliness, healthfulness, and taste using 5-point scales (e.g., 1, *very bad for animals*, to 5, *very good for animals*). Finally, they completed demographic questions and indicated their current consumption of animal products and alternatives. All of these questions can be seen in the survey instrument.

Phase 3 Results

Methodological note: We pre-registered a set of hypotheses and analyses for this study, based on the results of the Phase 2 study. These can be found on Faunalytics' Open Science Framework page. We note in the text where the results supported or rejected our pre-registered hypotheses.

A Note On The Graphs

The way the labels are scored, as described above, produces a range of possible scores from -14 to +14 (most tend to fall in the middle, close to 0). Therefore, the graphs below show a range that includes positive and negative numbers, reflecting above- and below-average scores.

The scores do not have much meaning on their own, but the purpose of this study was to look at differences between labels and groups. To read the graphs, focus on the differences between labels or groups rather than the numbers themselves.

The error bars show the 95% confidence interval for each estimate. The error bars give a good sense of which ratings are significantly different. If they overlap by more than about 25% of their length, the difference is not statistically significant.

How Do The Labels Compare?

Overall Means by Label
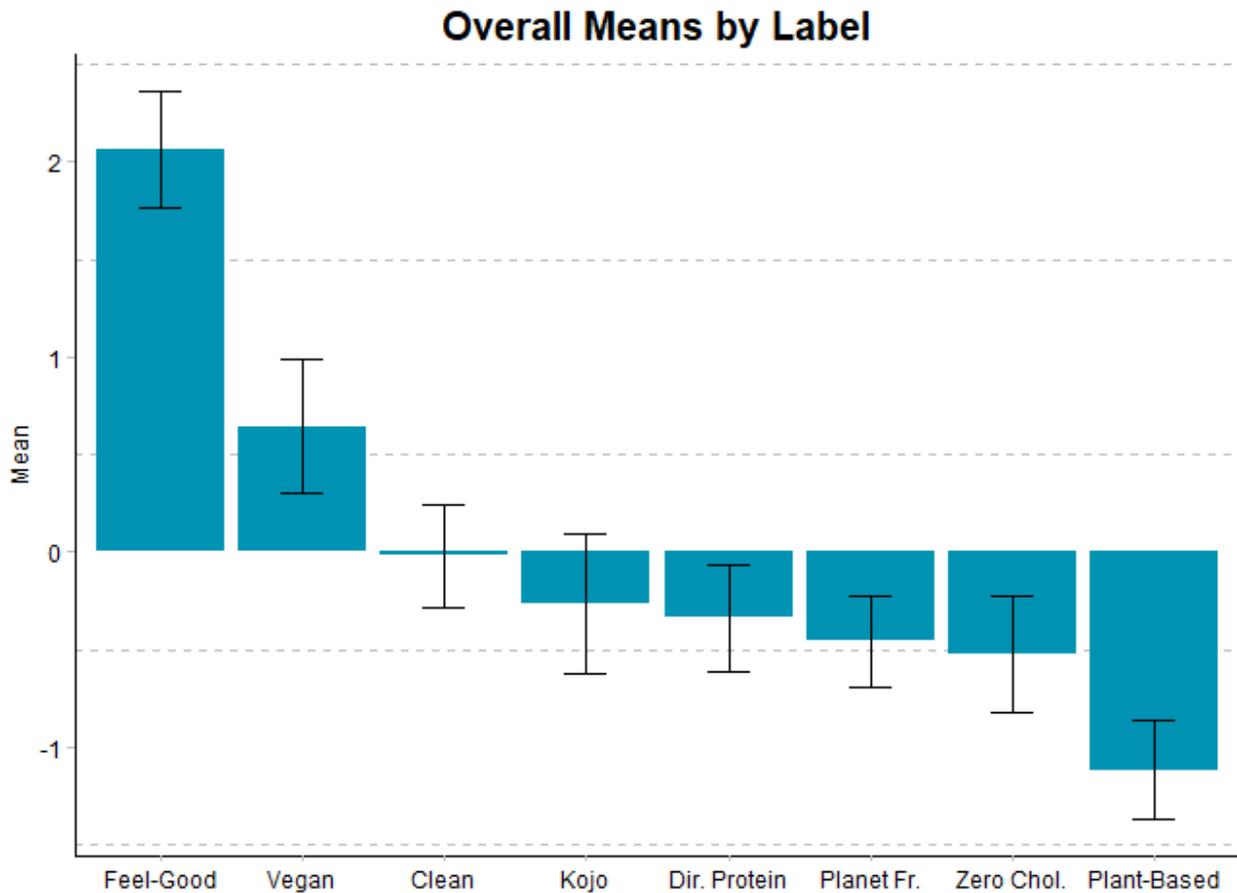
Notes. Scale range: -14 to +14 (A participant's score for a label would be +14 if they said it *sounds much better* than every other label, or -14 if they said every other label sounds much better than it). Error bars represent confidence intervals of the estimates.

Figure 4. Average Label Scores.

As shown in the graph above, *feel-good* was rated the highest on average, followed by *vegan. Plant-based* scored the lowest. In other words, when these labels were directly pitted against each other, people tended to choose *feel-good* and *vegan* a lot, and *plant-based* the least.

The findings for *plant-based* supported our hypothesis, but the findings for *vegan* did not. We had guessed that all of the new labels would do better than both standard labels. We were also surprised to see that *vegan* outperformed *plant-based* by so much.

Not all of the differences you see in the graph are significant. For example, you may notice that there is a lot of overlap in the error bars for *kojo, direct protein, planet friendly,* and *zero*

cholesterol. The average ratings of those labels are not significantly different. That is, you should consider them to be the same.

Methodological note: The details of the pairwise analyses are included in the Supplementary Materials.

Explaining The Ratings: Taste, Health, Animals, Or Environment?

To understand why we see this pattern, we conducted a regression analysis. That is, we looked at the associations between how good people thought each label sounded overall on the one hand, and several product features on the other: their ratings of its healthiness, taste, impact on animals, and environmental friendliness. (Graphs of the average ratings for each label are provided in the Supplementary Materials.

We found that, of these, the only significant predictor was taste: When people thought a label sounded tasty, they liked the sound of it more. Their beliefs about how healthy, good for animals, or environmentally friendly the labels were varied quite a bit, but didn't have any effect on overall preferences.

The importance of taste perceptions can partially explain why *feel-good* did so well and *plant-based* so poorly, but the regression analysis showed that taste perceptions account for only a small amount of the variance in people's overall label ratings. There is a lot of room for other factors to come into play.

Methodological note: The details of this regression analysis are included in the Supplementary Materials.

Consumer Characteristics

Taste—as well as impact on health, animals, and the environment—are features of the product that may influence how much people like the sound of it. As we saw above, taste was the only product feature of the four we tested that had a significant influence.

However, we conducted this study in part because we believed that characteristics of the *consumer* are important as well. In everyday life, it is often apparent that things appeal differently to different people. In the domain of meat alternatives, quantifying differences in label appeal may provide valuable insight into marketing strategies.

We examined the impact of six consumer characteristics on preferences. Those were: age, gender, ethnicity, region of the U.S., income level, and status as a current consumer or non-consumer of meat alternatives.

Methodological note: The details of this regression analysis are included in the Supplementary Materials.

Gender and age had a significant impact on participants' preferences, as did whether they consume meat alternatives or not. On the other hand, ethnicity/race, region, and income did not

significantly affect preferences. This doesn't mean that there were no significant differences by ethnicity/race, region, or income for any label, but they don't have much explanatory power and may not be reliable, so we haven't described them in this report.

Graphs of the label ratings for all demographic groups are provided at the end of the Supplementary Materials.

The next sections describe the specific results for gender, age, and consumption status.

Gender And Age

The graphs below show how gender and age influenced responses to each of the eight labels.

- *Feel-good*: This label was liked significantly more by younger people than older people (p = .001).
- *Vegan:* This label was significantly less appealing to men than women (p < .001), especially younger men. As we had hypothesized, younger men rated *vegan* lower on average than women and older men (p = .04).
- *Direct protein:* This label was significantly more appealing to men than women (p < .001), especially younger men. As we had hypothesized, younger men rated *direct protein* significantly higher on average than women and older men (p < .05).
- *Plant-based:* Men liked this label significantly less than women did (p = .001). We had hypothesized that, like *vegan,* younger men would particularly dislike *plant-based*, but this was not supported (p = .33).
- *Kojo:* This label was significantly more appealing to men than women (p < .001), and to younger than older people (p < .001).
- *Zero cholesterol:* The appeal of this label was strongly influenced by age, with older people liking it significantly more than younger people (p < .001).
- *Clean* and *planet friendly:* Age and gender had no significant effect on ratings of these labels (all ps > .11).
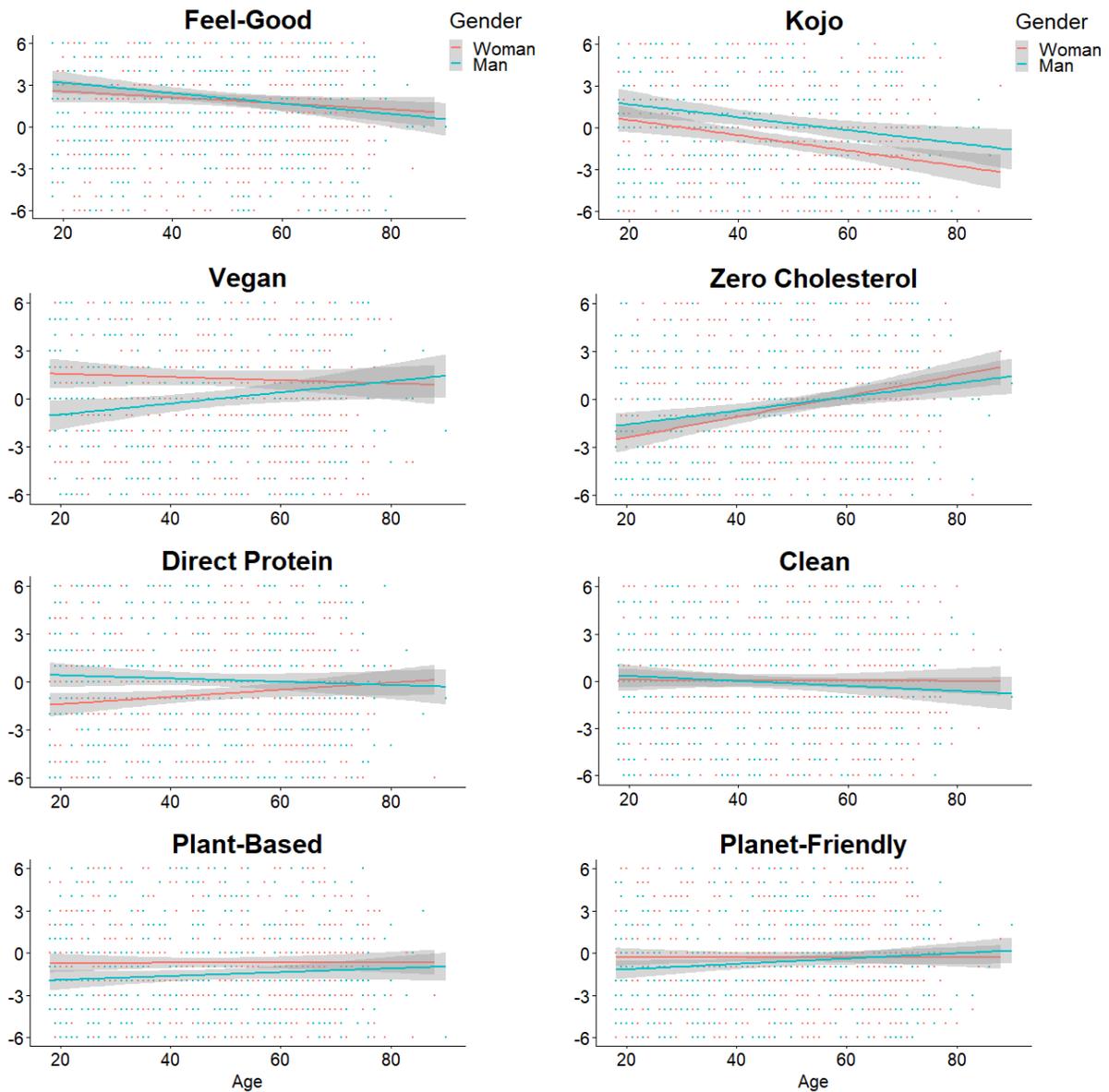
Note. Gender = "Other" suppressed because of the very small sample size.

Figure 5. Label Preferences By Gender And Age.

Consumers And Non-Consumers Of Animal Product Alternatives

Participants were categorized as consumers of animal product alternatives using a broad definition: having eaten a meat, dairy, or egg alternative at least once in the past three months. Among the omnivores who were included in these analyses, 58% were categorized as alternative consumers. The graph below shows a breakdown of the labels by alternative consumption status.

Mean Ratings by Alternative Consumption Status
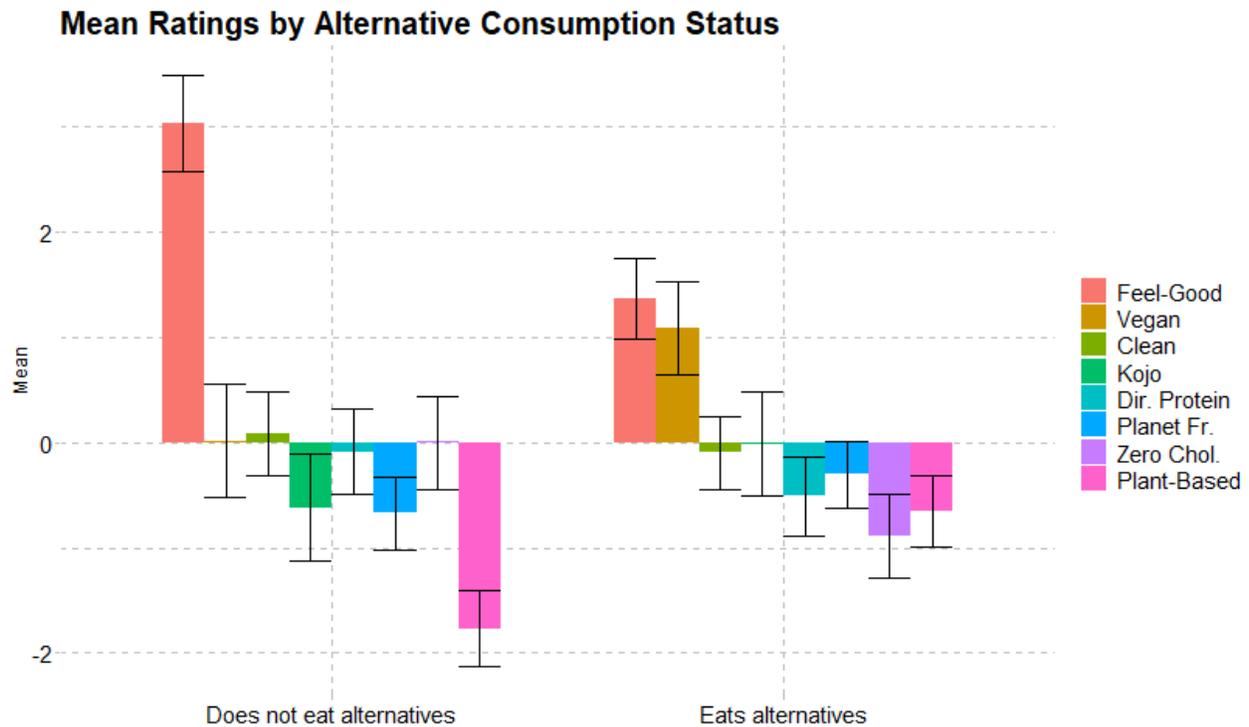
Figure 6. Label Preferences By Alternative Consumption Status.

The regression analyses for individual labels showed that consumption status had a significant influence on ratings of several labels.

- *Vegan* and *plant-based:* As we had predicted, people who currently consume animal product alternatives liked the current labels significantly and substantially more than non-consumers (ps < .003). This difference likely arises from the fact that current consumers would be used to seeing and purchasing products with these labels;

- *Planet friendly*: Current consumers of animal product alternatives also liked the label *planet friendly* more than non-consumers, though the difference is less striking (p <.05);

- *Feel-good* and *zero cholesterol:* People who do not currently consume any animal product alternatives liked these labels significantly more than current consumers;

- Consumption status had no effect on how much people liked the labels *clean* (p = .44), *kojo* (p = .45), and *direct protein* (p = .20).

16

Conclusions & Recommendations

It is useful to consider the results with a focus on the current labels, *vegan* and *plant-based.* Who likes them? Who doesn't? For those who don't, what might work better?

Vegan

If your goal is to appeal to people who already consume animal product alternatives and young women, this research suggests that the term *vegan* may be your best bet.

On the other hand, *vegan* may not be the best choice if you want to bring in new consumers (people who don't currently consume animal product alternatives) or men—especially young men.
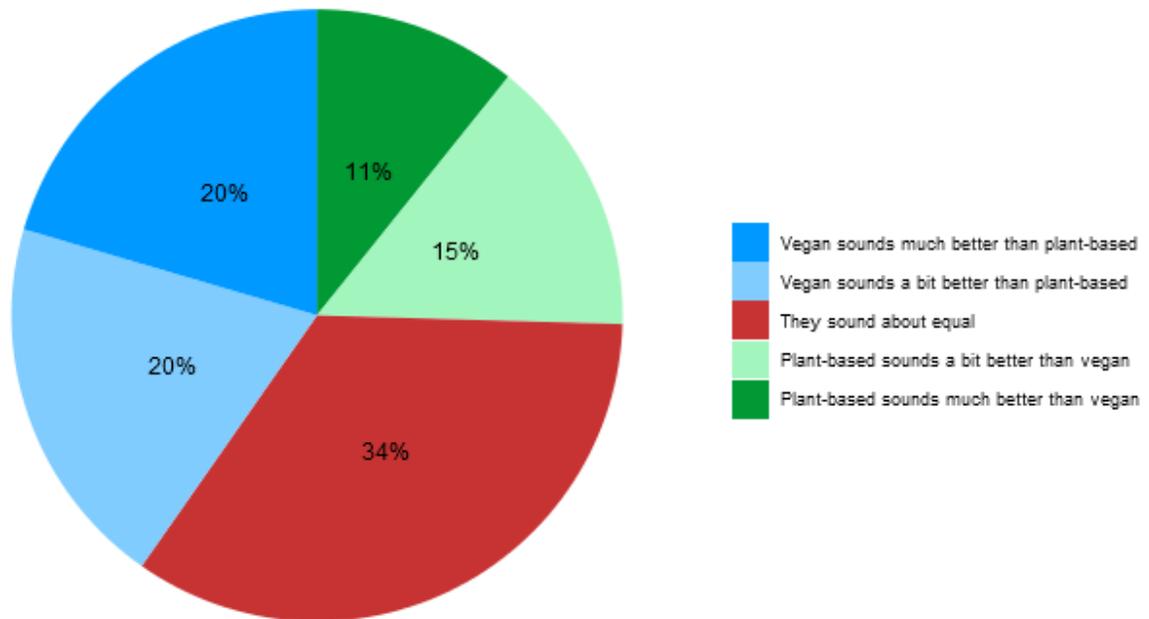
Plant-Based

Our Phase 3 study found that *plant-based*—when compared to the other terms—wasn't a great option for any group. That isn't to say that nobody prefers it over other terms (in Phase 2, for example, people said they were as likely to buy products labeled *plant-based* as the rest), but on average, people preferred other labels in the head-to-head comparison.

Further Consideration Of Vegan Vs. Plant-Based

The overall scores used in this study are calculated based on the full set of labels tested. To make sure that we aren't drawing unwarranted conclusions based on labels that don't exist on the market, we also looked at the specific comparison that participants made between *vegan* and *plant-based*.

The average response supported our conclusions, with *vegan* clearly favored over *plant-based*. However, looking at the frequencies with which each response option was chosen (Figure 7) gives a better sense of the diversity of preferences.

Figure 7. Preferences For Vegan Vs. Plant-Based In Direction Comparison.

There's no clear consensus among consumers about which label is better. The group who preferred *vegan* is more than 1.5 times the size of the group who preferred *plant-based,* but it is important to note how much preferences vary.

Other Options

Feel-good scored the highest relative to other terms overall. What does this mean? Should we change all of our products or advocacy language to say *feel-good* instead of *plant-based*? Probably not.

This label isn't particularly descriptive of the content of a meat-free burger and would require supplementary labeling or explanation. If the findings of this study inspire anyone toward high-cost changes to methods or packaging, it is imperative to test the success of this label more thoroughly first: with supplementary labeling or explanation, in real buying or advocacy contexts, and on other products. It cannot be assumed that our results would generalize to other contexts.

Although we don't recommend anyone switch to *feel-good* without further testing, there are several very important general marketing implications that come out of this study, as described in the rest of this section.

Everyone Wants To Feel Good

The success of the most generally positive label, *feel-good,* suggests playing up the ability of meat-free eating to make a person feel good. This label has no clear focus on health, morality, or anything else; it just implies a general sense of well-being. In a domain steeped with health and

morality messaging, this suggests that a broader, positivity-based approach may be successful with a large number of people.

Appealing To Older People With Zero Cholesterol

Although *zero cholesterol* wasn't rated very high overall, it is worth noting how much better it performed with older adults. This suggests that, when targeting this group, messaging could benefit from focusing on this very specific benefit of eating food free of animal products.

Appealing To Men With Adoption Of Some Terms And Avoidance Of Others

Veg*n advocates are very aware of the difficulty of targeting men, given the common association of veg*nism with weakness and femininity (Rothgerber, 2012; Thomas, 2016). This study clearly shows that difficulty as it applies to current products—men disliked the sound of both *vegan* and *plant-based*. Several companies have recently moved away from any kind of explicit labeling and are using packaging with more intuitively masculine packaging (e.g., Wicked Kitchen). This study supports those strategies as a viable means of appealing to this demographic, which has historically been underrepresented among veg*ns and difficult to reach, yet is very important because this group tends to consume a lot of meat.

In addition, although *direct protein* performed in the middle of the pack overall, it is notable for its greater success in appealing to men, especially young men, suggesting that protein in particular is a positive term for young men. So, this may be a useful phrase for companies and advocates to adopt when targeting this group.

Plant-Based As A Product Label Needs More Testing

This study also points to the importance of testing—thoroughly and specifically—a new term before adopting it. More research with other methodologies and target products is needed, but this study suggests that labeling a product as *plant-based* may appeal to a smaller segment of consumers than many other options, most notably including *vegan.*

Vegan Is Not A Dirty Word With Most Consumers Of Meat-Free Products

Vegan doesn't appeal to everyone, but one key implication of this study is that it is far from a dirty word when it comes to labeling foods that don't contain animal products. The word may be perceived differently when it comes to a vegan *diet* or vegan *person*, but in the context of a specific product, *vegan* was fairly well-liked relative to other options. We speculate that its familiarity and clarity may contribute to this preference.

Although marketers may wish to avoid the *vegan* label for products that specifically target men, as discussed above, this study shows that it is preferred over many other ways of labeling food free of animal products.

A Range Of Strategies For A Range Of Consumers

Perhaps the biggest implication of this study is that there is no one-size-fits-all approach to labeling. For advocates, this means targeting your messages to specific groups. For marketers, it is more difficult. Advertising can be targeted but packaging must be fairly standardized. However, as more and more companies begin to manufacture animal product alternatives, they can fill different niches. The market is far from saturated and there is a lot of room for tailored approaches to target underrepresented groups.

Future Analyses

This report covers a lot of results, but it is not exhaustive. Over the next few months, Faunalytics will be conducting a few additional analyses. These will include a more detailed look at how taste ratings differ by label and demographics, as well as an examination of the animal product alternatives eaten by people with different diets.

We also encourage other researchers to download the datasets for these studies from the Open Science Framework and conduct additional analyses of their own. If you do, please share your findings with us!

Supplementary Materials

Phase 2

Details Of Pairwise Analyses

For Phase 2, we conducted *t*-tests to compare the benchmark labels *vegan* and *plant-based* against each of the 20 new labels. Because this study was intended to be exploratory, we did not correct for multiple comparisons.

Table S1 below shows the average score on the standardized composite for each label in the first column. The second and third columns show the *p*-values for the paired *t*-test comparing each label's mean against the mean of *vegan* and *plant-based*.

Table S1: Label Means And p-Values For t-Tests.

	Mean	p (Vegan vs. Other Label)	p (Plant-Based vs. Other Label)
Feel-Good	0.16	.005	.002
Zero Cholesterol	0.08	.099	.05
Kojo	0.04	.276	.16
Planet Friendly	0.02	.458	.29
Clean	0.01	.470	.30
Direct Protein	0.01	.466	.29
Sun Powered	0.00	.629	.42
Vegan (benchmark)	*-0.04*	-	.69
Plantiful	-0.05	.899	.85
Enlightened	-0.05	.844	.90
Mindful	-0.05	.804	.94
Eco	-0.06	.757	.99
Plant-Based (benchmark)	*-0.06*	.694	-
Sustainable	-0.06	.731	.98
Plant Strong	-0.09	.419	.62
Earth Powered	-0.10	.388	.59
Earth-Based	-0.11	.326	.51
Future	-0.11	.307	.48
Plant Powered	-0.13	.186	.32
Longevity	-0.14	.135	.24
Plant Forward	-0.16	.085	.16
Harmless	-0.17	.060	.12

Phase 3

Details Of Pairwise Analyses

Per our pre-registered analysis plan, which specified that we would correct for multiple comparisons, we computed the full set of pairwise comparisons using two-tailed t-tests controlling for the false discovery rate (FDR; Benjamin & Hochberg, 1995).

Table S2 shows the mean score and confidence interval for each label. Table S3 shows the p-values for each pairwise comparison, adjusted for FDR.

Table S2: Label Means And Confidence Intervals.

Label	Mean	Confidence Interval
Feel-Good	2.06	(1.76, 2.36)
Vegan	0.64	(0.30, 0.99)
Clean	-0.02	(-0.28, 0.24)
Kojo	-0.27	(-0.62, 0.09)
Direct Protein	-0.33	(-0.61, -0.06)
Planet Friendly	-0.46	(-0.69, -0.22)
Zero Cholesterol	-0.52	(-0.82, -0.22)
Plant-Based	-1.11	(-1.37, -0.86)

Table S3. Adjusted p-Values For Pairwise Comparisons.

	Feel-Good	Vegan	Clean	Kojo	Dir. Protein	Planet Fr.	Zero Chol.
Vegan	< 0.001						
Clean	< 0.001	0.01					
Kojo	< 0.001	0.001	0.38				
Dir. Protein	< 0.001	< 0.001	0.16	0.79			
Planet Fr.	< 0.001	< 0.001	0.03	0.48	0.58		
Zero Chol.	< 0.001	< 0.001	0.03	0.42	0.38	0.79	
Plant-Based	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001	0.007

Regression Analysis: Taste, Health, Animals, And Environment

As shown in Table S4, only taste was a significant predictor of label score. It accounted for 1.4% of variance, as determined by the change in R^2 when it was entered into the model last.

Table S4. Regression Analysis: Taste, Health, Animals, And Environment.

Predictor	Label Score (SE)
Health	0.05 (0.07)
Animals	0.06 (0.07)
Environment	-0.04 (0.07)
Taste	0.75*** (0.06)
(Intercept)	0.00 (0.05)

Observations	11,064
R2	0.019
Adjusted R2	0.019
Residual Std. Error	5.581 (df = 11059)
F Statistic	54.089*** (df = 4, 11059)

$**p < 0.01, ***p < 0.001$

Regression Analysis: Consumer Characteristics

We used linear regression to test the associations between our predictor and outcome variables.

Each regression model's simultaneous predictors included label as well as all of the panel variables and status as a current consumer of animal product alternatives. Namely:

- Age;
- Gender;
- Age x Gender interaction term;
- Ethnicity/Race (White, Black, Hispanic, other);
- Region (Northeast, Midwest, South, West);
- Income; and
- Animal product alternative consumption status (yes, no).

We first looked for overall impact of each demographic category by examining the difference in variance explained (R^2) between the regression model with only label as a predictor and a model including interaction terms for the label and demographic contrasts. (As described in the Phase 3 Sample and Method section of the full report, every participant's mean label score was 0 as a function of the pairwise comparison design, so including demographic main effect terms gives coefficients of 0.)

Table S5 shows the variance explained (R^2) by the label variable, as well as the change in R^2 for each of the demographic categories, considered one at a time.

Table S5: R^2 Change By Demographic Category.

Model Predictors	R2	R2 Change from Base Model	p
Label (Base Model)	0.026		
Label, Gender x Age	0.041	0.016	< .001
Label, Ethnicity/Race	0.029	0.003	.08
Label, Region	0.027	0.002	.84
Label, Income	0.026	0.000	.77
Label, Alt. Consumption Status	0.032	0.006	< .001

Taste, Health, Animal-Friendliness, And Environmental-Friendliness Ratings For Each Label

These graphs show how people perceived products with each of the labels, on average.
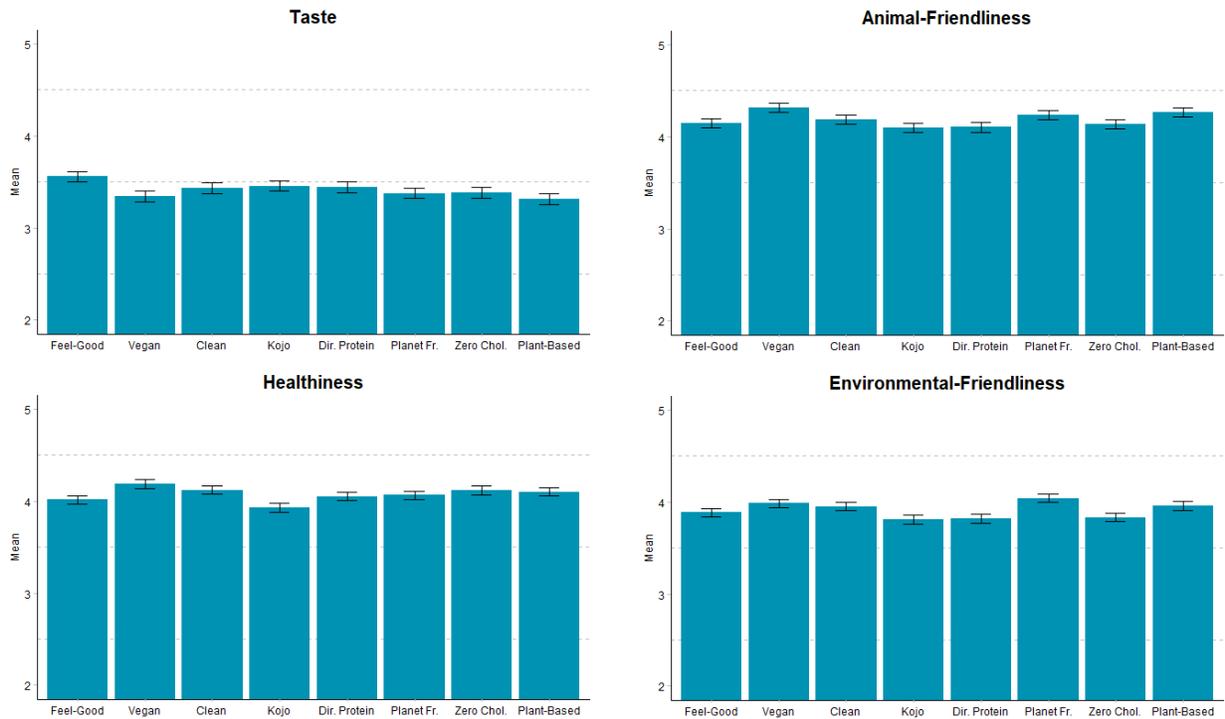
Note. Each scale ranged from 1 to 5, where 1 was *very bad-tasting/unhealthy/bad for animals/bad for the environment,* and 5 was *very good-tasting/healthy/good for animals/good for the environment.* The neutral midpoint was 3. The error bars show the 95% confidence interval for each estimate.

Figure S1: Ratings Of Labels' Taste, Healthiness, Animal-Friendliness, And Environmental-Friendliness.

Label Scores By Demographic Group

These graphs show the average score for each label by demographic group. Significance tests are not provided because they would be meaningless with so many comparisons, but the error bars can be used as a rule of thumb. If the error bars for two different means on a graph overlap by more than about 25% of their length, the difference is not statistically significant.
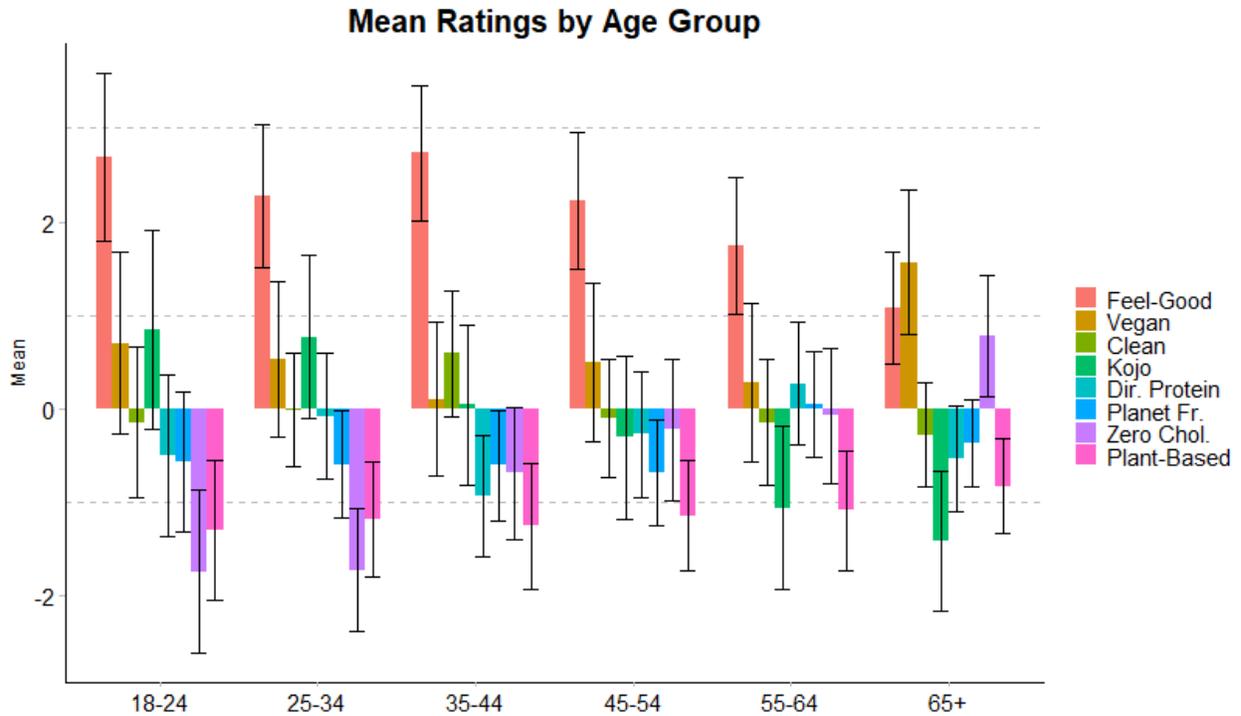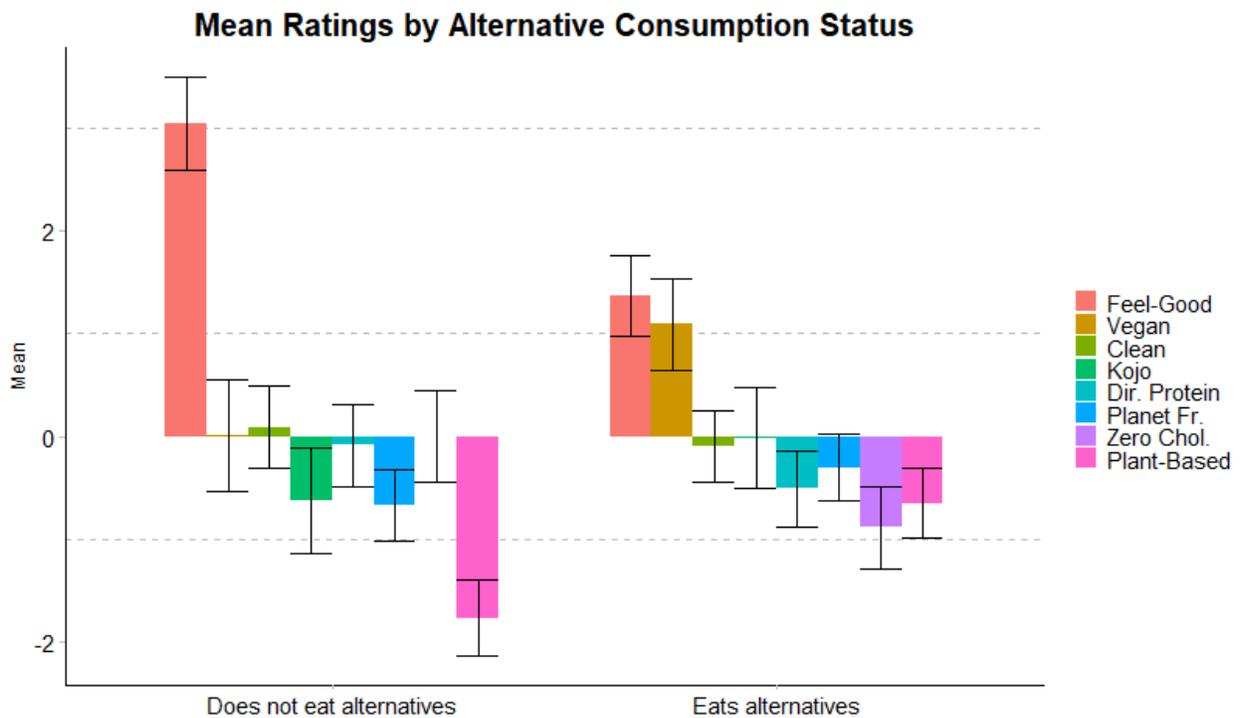

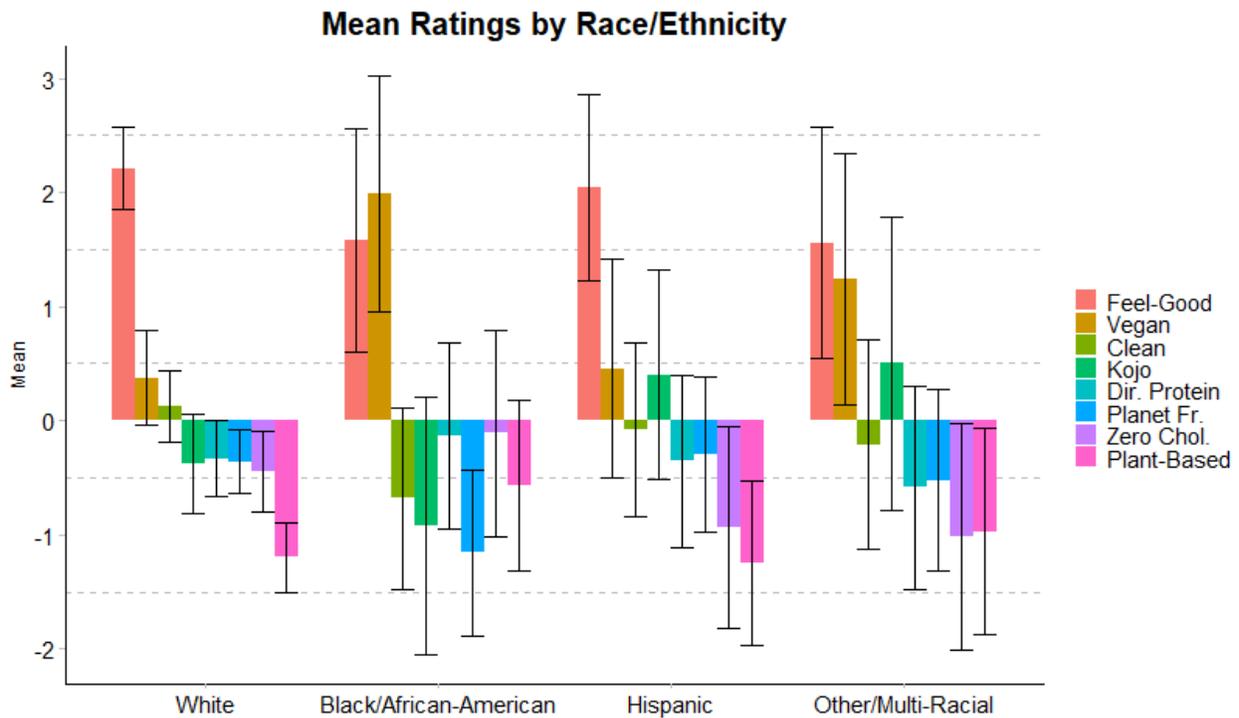*Figure S2: Label Preferences By Age Group.*
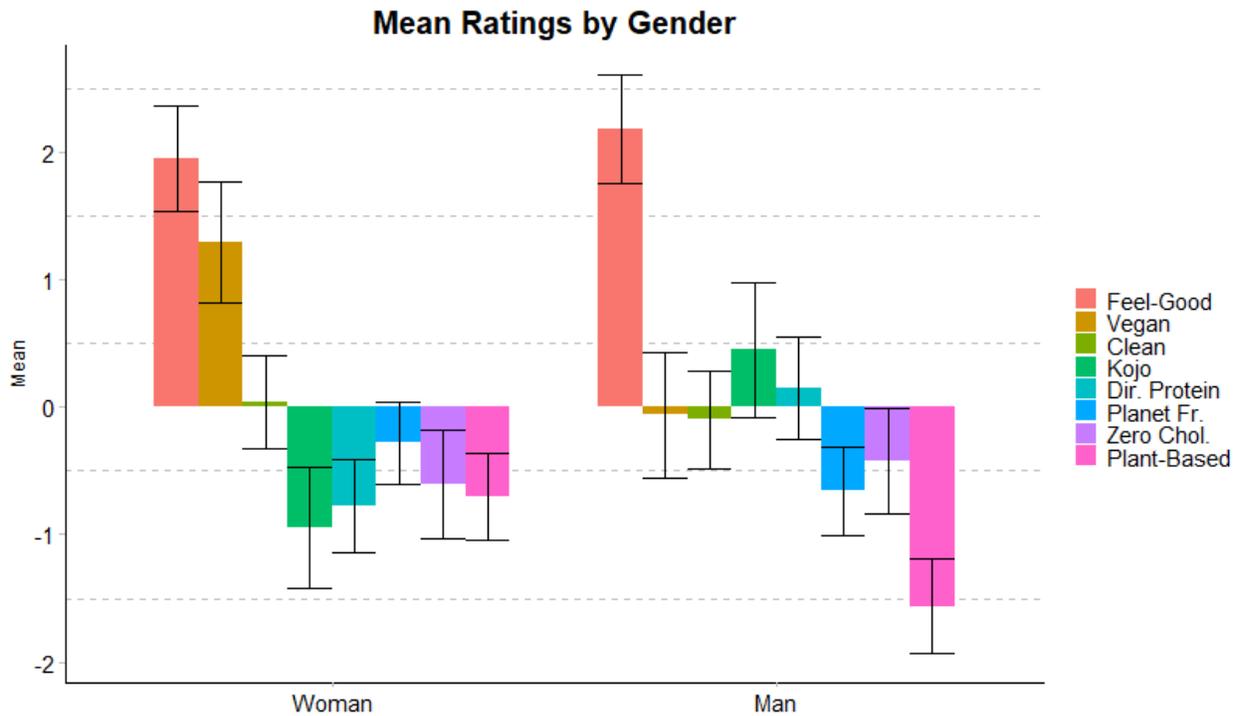
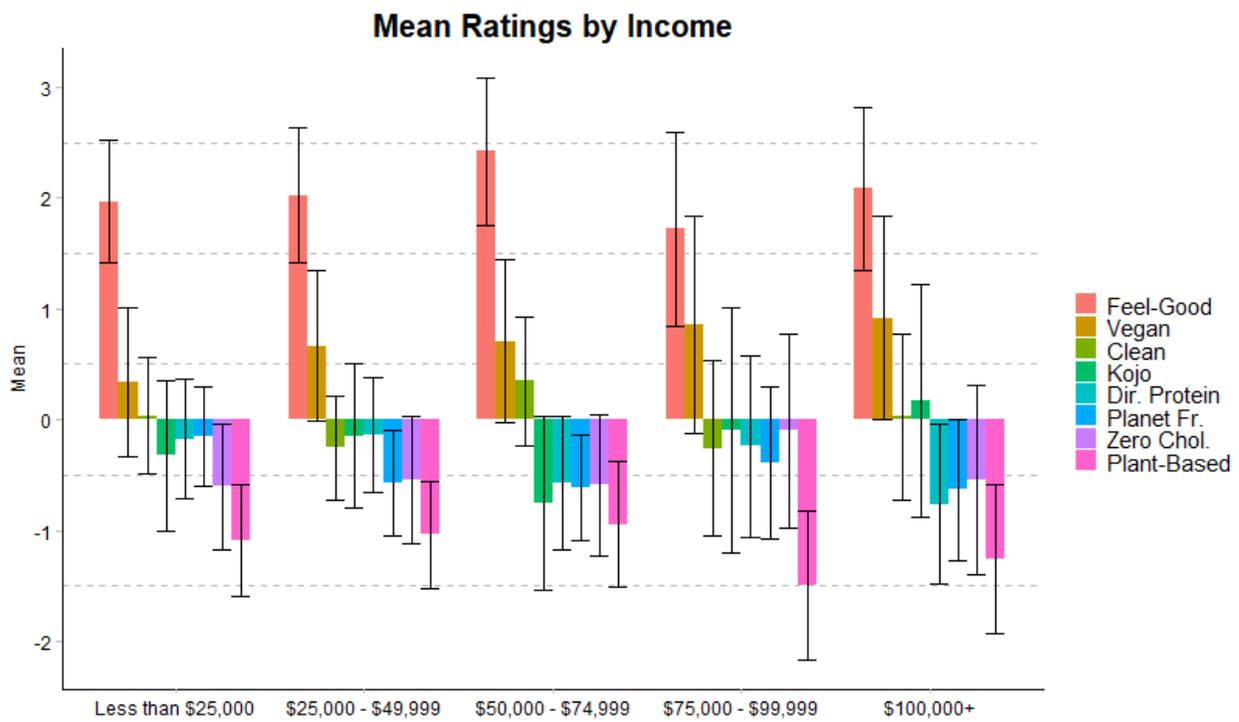*Note.* Gender = "Other" suppressed because of the very small sample size.

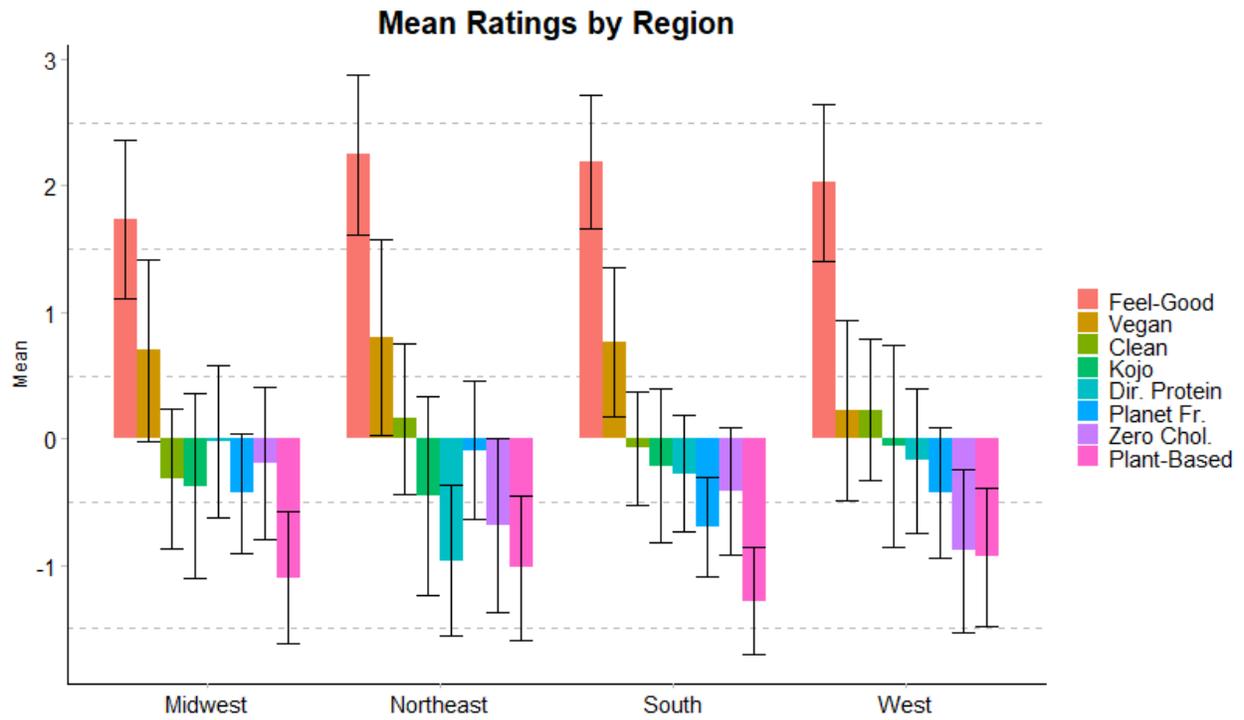**Figure S3: Label Preferences By Gender.**

Figure S4: Label Preferences By Alternative Consumption Status.

Mean Ratings by Race/Ethnicity

Figure S5: Label Preferences By Race/Ethnicity.

Mean Ratings by Income

Figure S6: Label Preferences By Income.

Figure S7: Label Preferences By Region.