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CONSUMER FOOD INSIGHTS

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INTRODUCTION

Consumer Food Insights is a monthly survey of more than 1,200 Americans from across the country produced and run by the Center for Food Demand Analysis and Sustainability (CFDAS) at Purdue University to track trends and changes in consumer food demand and food sustainability behaviors.[1] Visit purdue.ag/CFDAS for more details.

In this issue, we explore 2022 trends in food spending, happiness, and other sustainability behaviors. We aggregated 12 months of survey data (January - December 2022) to compare consumer responses from month to month. In addition, new questions included in this month's survey checked in on what consumers were spending on food and drink this holiday season and asked about agriculture-related topics found on the Apollo Academic Surveys questionnaire. Interested in more in-depth analysis? Contact cfdas@purdue.edu to learn how you can join our industry consortium.

SFP INDEX
69 /100

FOOD INSECURITY
16%

FOOD SPENDING
$186 /WEEK

FOOD HAPPINESS
86%

KEY INSIGHTS FROM DECEMBER

Over the course of 2022, **food insecurity** rates remained relatively stable; **food behaviors** such as choosing organics or checking GMO labels did not change; and, **food values** continue to favor taste over qualities like environmental sustainability.

Some notable exceptions in behaviors that did change include:

- Household food expenditures increased more than 15% from January.
- Consumers are shopping at discount stores more and spending less on discretionary expenses.
- 36% of consumers were worried about being able to afford holiday gifts this year.
- 14% of consumers are finding certain items out of stock compared to 25% in January.
- Sugar was the most common item that consumers limited in their diets in 2022.

HOLIDAY TRENDS

How were Americans spending during the holiday season?

Walmart was the biggest winner when it came to food, snack, and beverage spending this holiday season (**Figure 1**). It makes sense that consumers would shop where they can pick up both gifts and food for their holiday celebrations. However, we also found that **36% of consumers** were worried about affording holiday gifts this December and, in response, were increasingly shopping at discount stores (**Figure 2**). Of note, relying on 'buy now, pay later' services more was one of the top responses to budget stress, surpassing the use credit cards.

Additionally, when we compare changes in holiday grocery shopping to past months, consumers are continuing to seek out more sales and discounts (**Figure 3**). Though shopping behaviors have not changed dramatically since July, some habits are shifting. For example, 22% of consumers report switching to cheaper brands compared to 17% in February and July. This behavior change could be indicative of prolonged stress as more consumers give up on brand loyalty.

Figure 1. Retailer Who Received Most Holiday Food Spending, December 2022

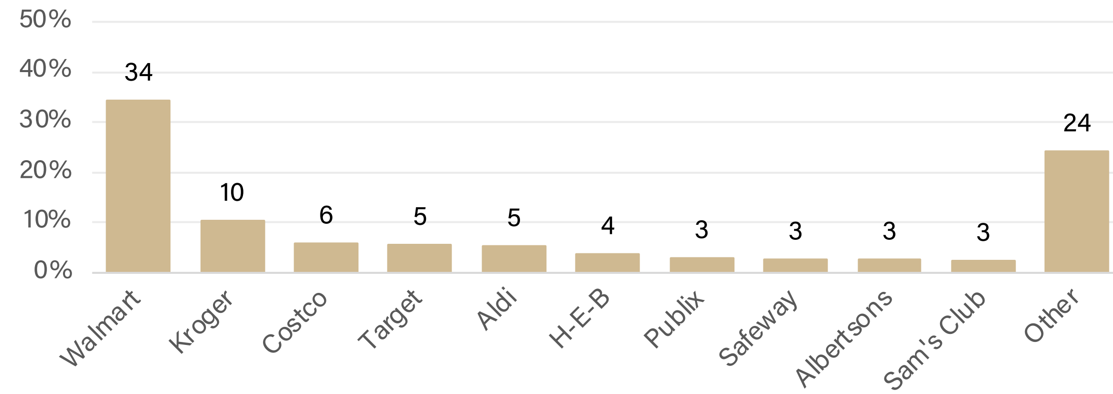
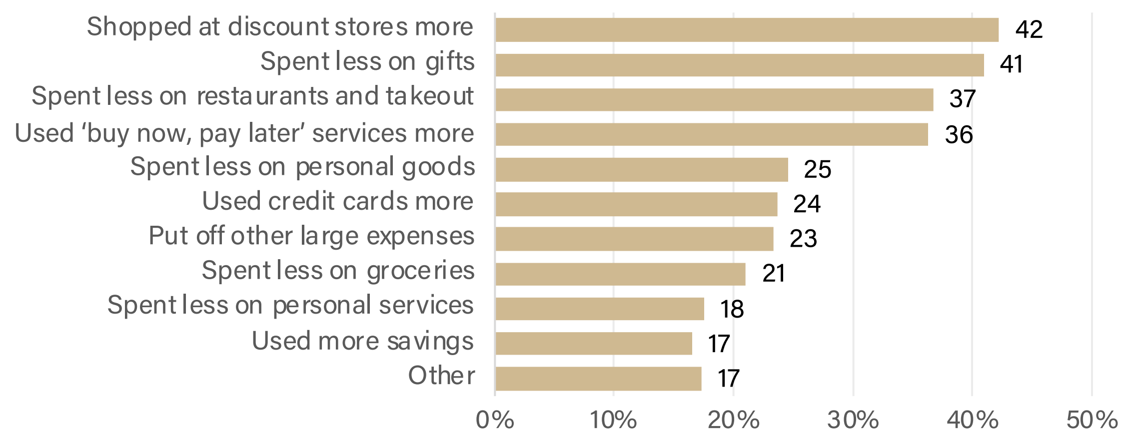


Figure 2. Changes in Holiday Spending Behaviors to Afford Gifts, December 2022

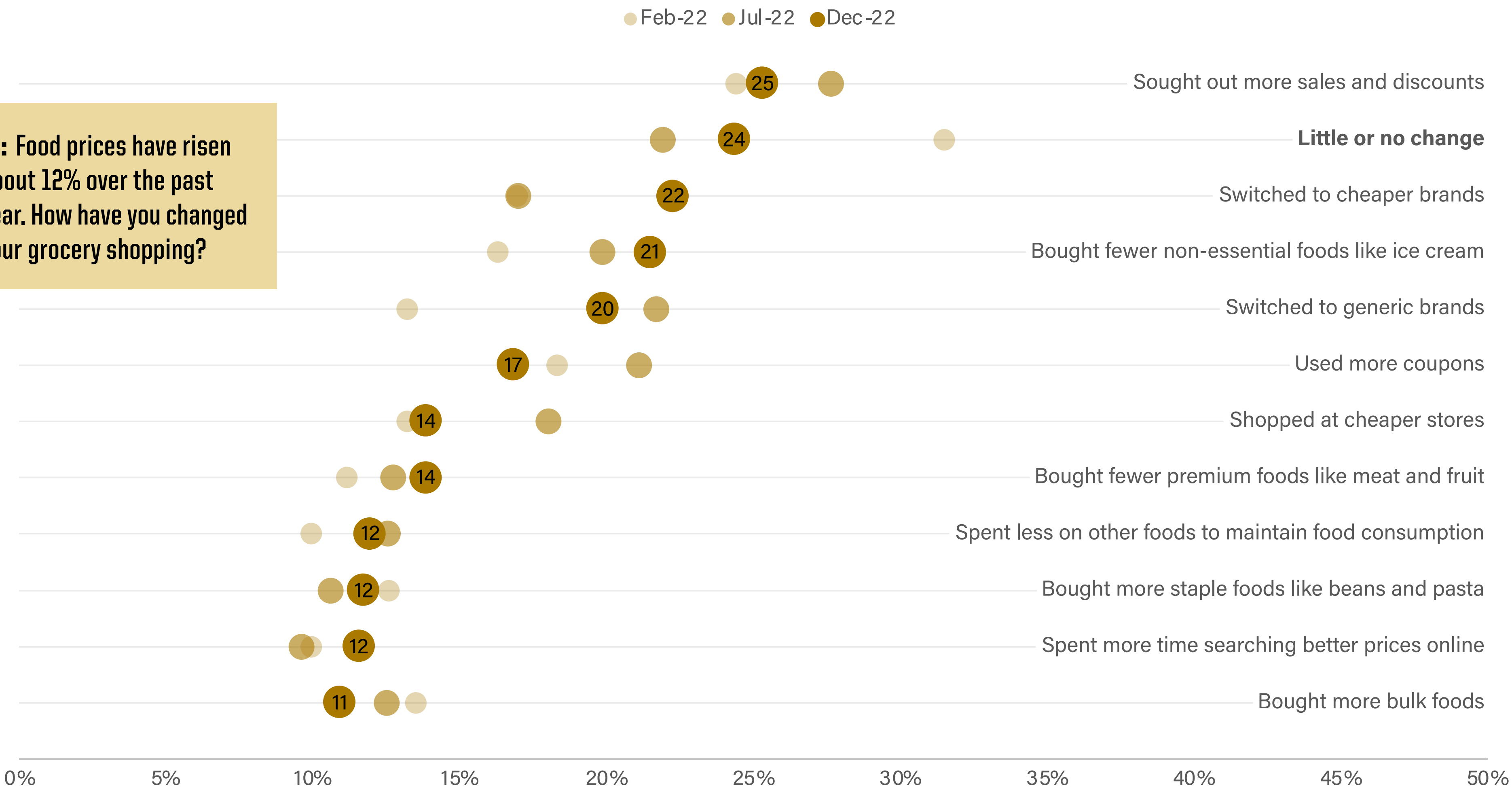


*Surveyed only 36% of consumers who were worried about affording their holiday gifts. Percentages add over 100% because respondents were allowed to choose up to 3 options.

HOLIDAY TRENDS

Figure 3. Changes to Grocery Shopping in Response to Food Price Inflation, February, July, December 2022

Q: Food prices have risen about 12% over the past year. How have you changed your grocery shopping?



*Percentages add over 100% because respondents were allowed to choose up to 3 options.

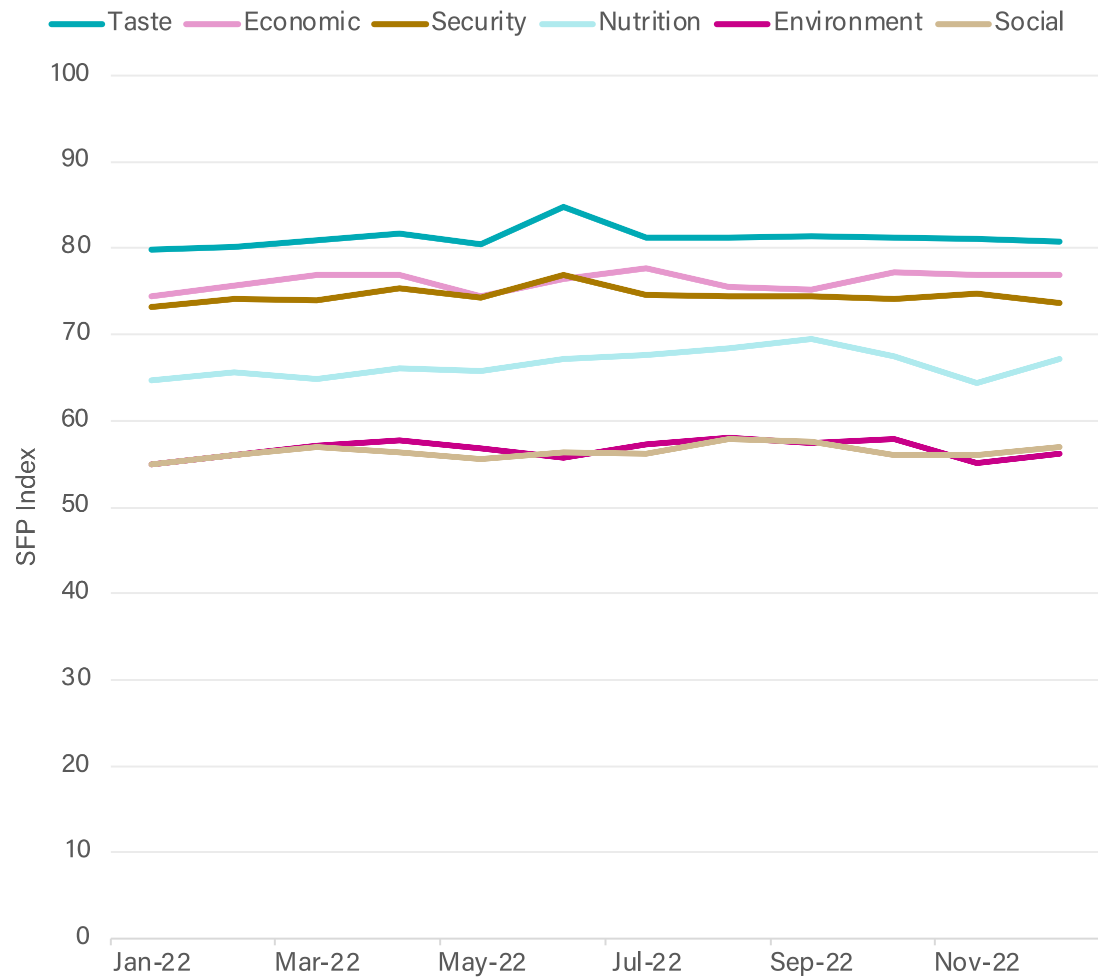
SUSTAINABLE DIETS

Are Americans purchasing sustainable foods?

The overall SFP Index has not changed over the course of the year. Although we observe a little monthly variation, these trend lines are ostensibly flat from January to December (**Figure 4**). Notably, the six indicators that we measure group together: taste, economic, and security at the top; nutrition in the middle; and, environment and social at the bottom. Read our paper "Measuring sustainable consumer food purchasing and behavior" for more advanced factor analysis of how these different sustainability indicators are interrelated.

The ***Sustainable Food Purchasing (SFP) Index*** is a self-reported measure of food purchasing designed to assess how well consumer shopping habits align with healthy diets from sustainable food systems, as described by the EAT-Lancet Commission on Food, Planet, Health. A top score of 100 reflects consumer food purchasing that aligns with a set of key recommendations for better nurturing human health and supporting environmental sustainability. The SFP Index includes six components—Nutrition, Environment, Social, Economic, Security, and Taste—correlating with the different strategies for achieving food systems transformation. More information on these components and the SFP scoring procedure is described on the CFDAS website.

Figure 4. Sustainable Food Purchasing Index, January - December 2022

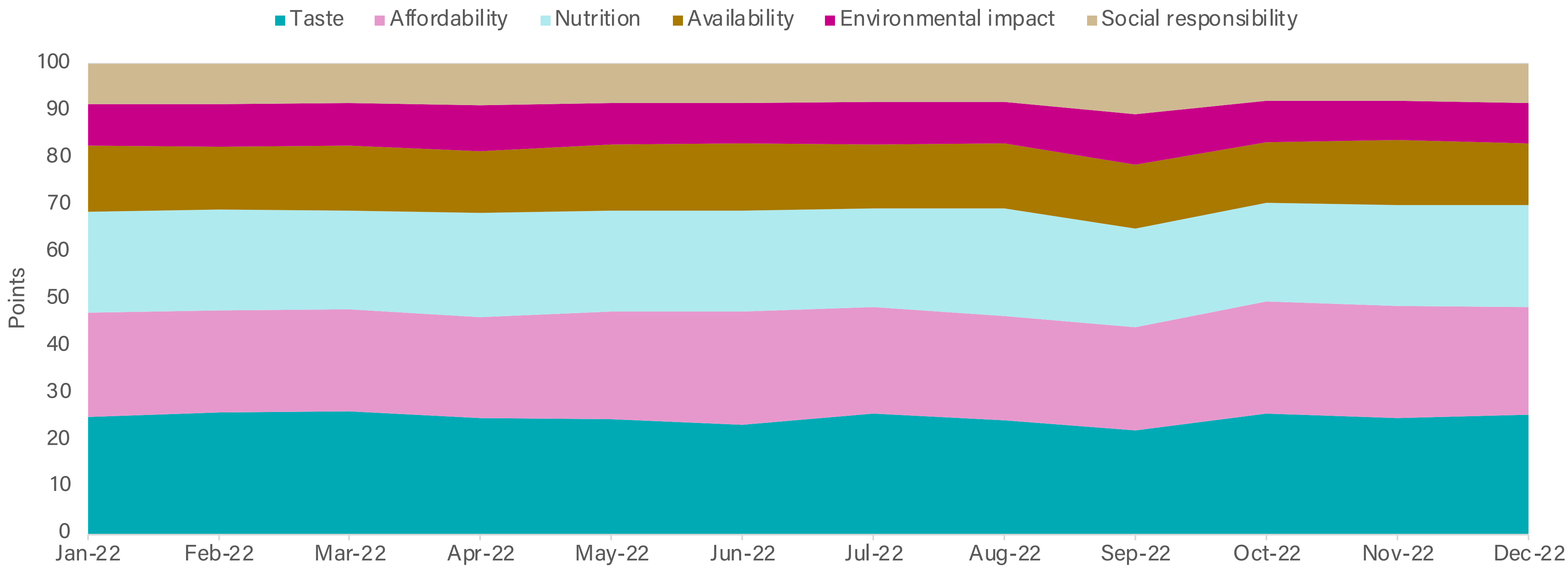


FOOD VALUES

What attributes do Americans most value when purchasing food?

Respondents were asked to allocate 100 points to six different attributes based on their importance when food shopping (**Figure 5**). These attributes closely reflect the components of the SFP Index. How much consumers value these sustainability components has remained relatively stable on a month to month basis. Taste continues to be the leading attribute that consumers prioritize every month, followed closely by affordability and nutrition. Conversely, the environmental impact and social responsibility of food purchases are, by far, of least concern to most consumers.

Figure 5. Share of 100 Points Allocated to Food Attributes, January - December 2022



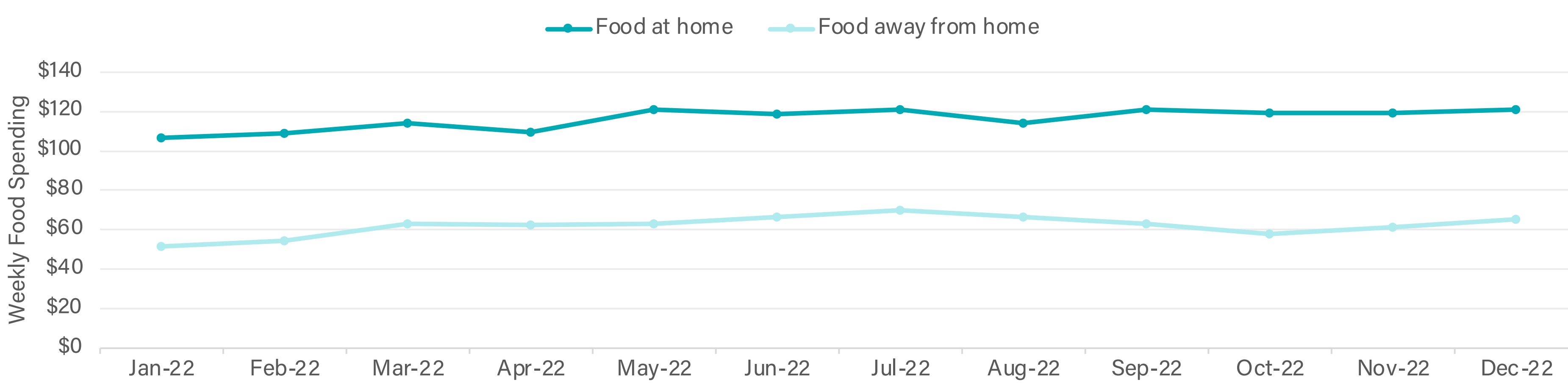
FOOD EXPENDITURES

How much are Americans spending on their food?

Respondents were asked to estimate their weekly food spending (**Figure 6**). On average, consumers reported spending $121/week on groceries (FAH) and $65/week on restaurants and other carryout meals (FAFH).[2] Since January, total food expenditures are up over 15%. Food spending, however, shot up this past spring and has remained relatively consistent since May. Consumers also continue to think that food price inflation will be nearly 4 percentage points lower over the next 12 months relative to the past 12 months (**Figure 7**). Food spending as a share of income continues to be stable as well (**Figure 8**). Of note, we do not include income from government assistance in these calculations so those reporting less than $25,000 annually appear to be spending a much greater share on food.

We further disaggregate these food expenditures, finding that restaurant dining receives the greatest share of FAFH dollars and that the distribution of FAFH spending across categories has not changed since January (**Figure 9**). Where people grocery shop—i.e., grocery stores, superstores, or other locations—has similarly not shifted this year (**Figure 10**). However, online grocery shopping is potentially becoming less popular as 15% of shoppers used this option in December compared to 21% in January (**Figure 11**).

Figure 6. Weekly Household Food Expenditures, January - December 2022



FOOD EXPENDITURES

Figure 7. Consumer Estimates of Food Price Inflation, January - December 2022

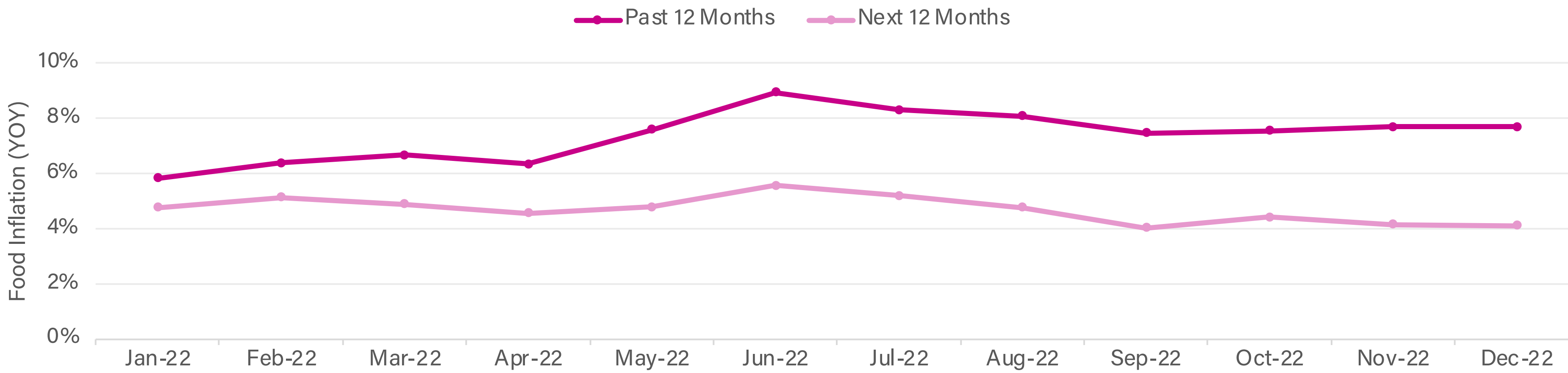
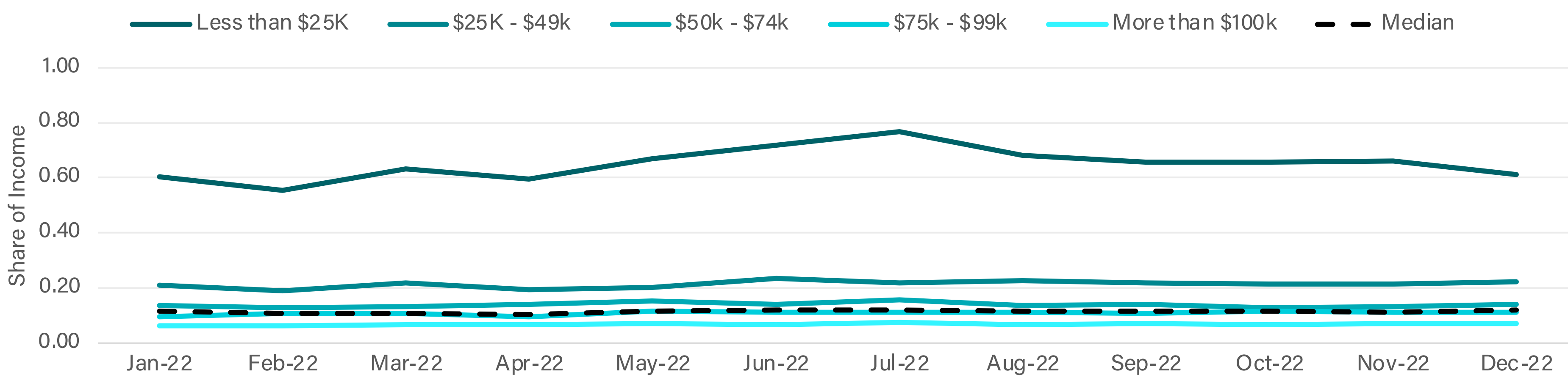


Figure 8. Total Food Expenditures as a Share of Income by Annual Household Income,, January - December 2022



FOOD EXPENDITURES

Figure 9. Location/Method of Food Away From Home (FAFH) Spending, January - December 2022

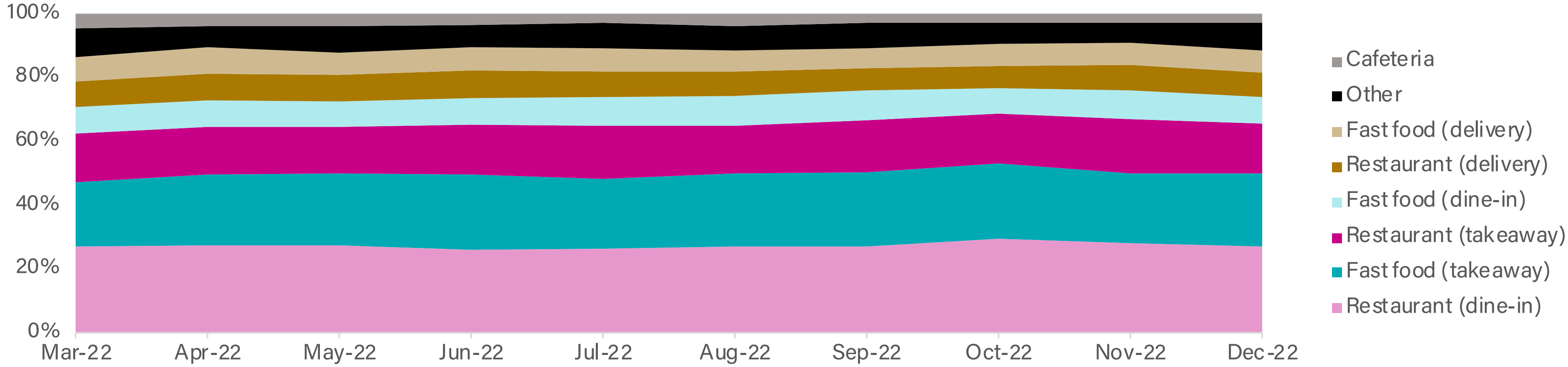


Figure 10. Grocery Shopping Location, January - December 2022

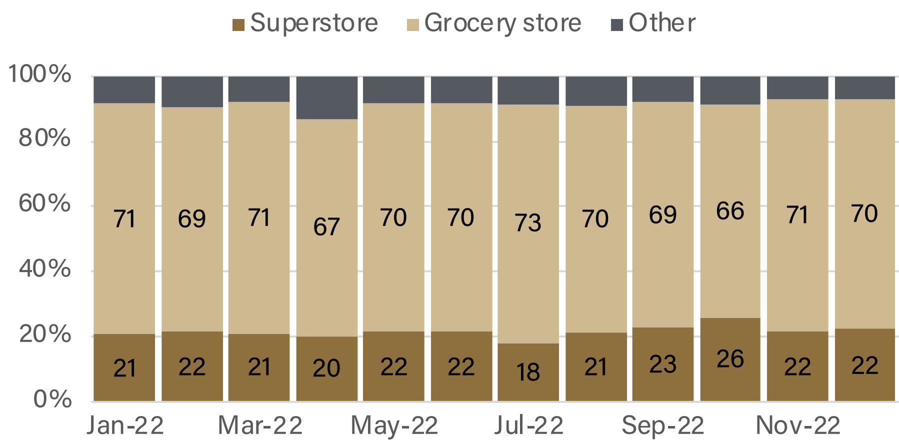


Figure 11. Grocery Shopping Method, January - December 2022

FOOD SECURITY

Are Americans having trouble buying food for their families?

Based on responses to six standardized questions about food bought and eaten in the last 30 days, we estimate the national rate of food insecurity to be 16%.[3] **Figure 12** shows that this rate was last this high in August and has remained within a range of about 3% throughout the year.

However, **Figure 13** captures how long households receiving SNAP benefits (formerly food stamps) have been using the program and suggests that reliance on these benfits has increased. The mean length of time on SNAP was 9.5 months in January but is now 12.4 months as of December. Given food insecurity has not meaningfully increased throughout the year, we are led to believe that these social safety net programs are working.

Interested in further exploring how the rate of food insecurity has changed in recent years? Visit our [Aggregate Tracker of National Food Insecurity]() dashboard. This resource collects publicly available survey data and plots their trends.

Figure 12. Household Food Security in the Last 30 Days According to USDA Survey Module: Six-Item Short Form, January - December 2022

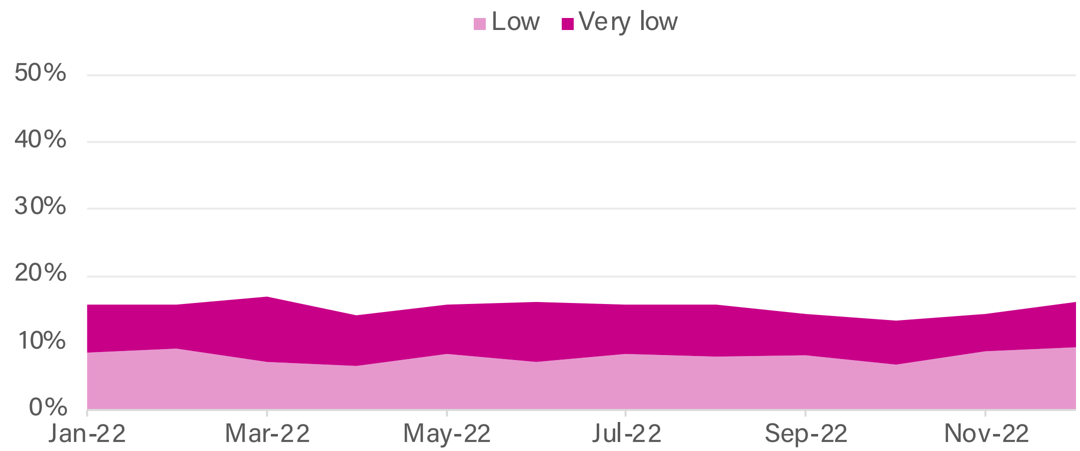
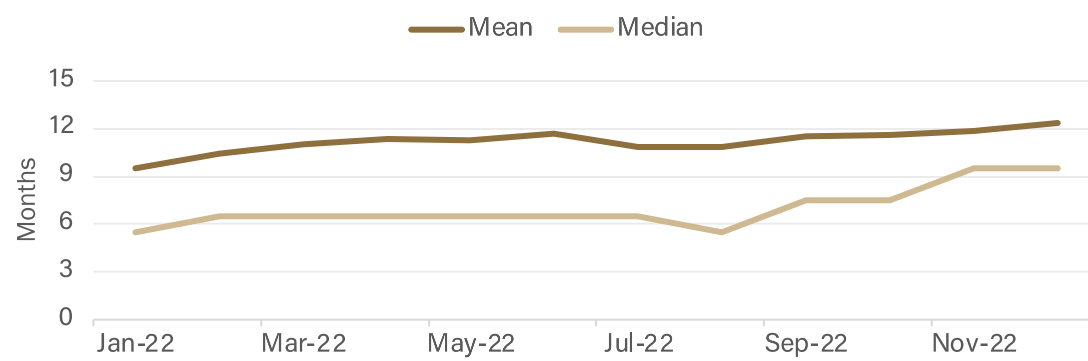


Figure 13. Average Number of Months Households on SNAP have been Receiving Benefits, January - December 2022

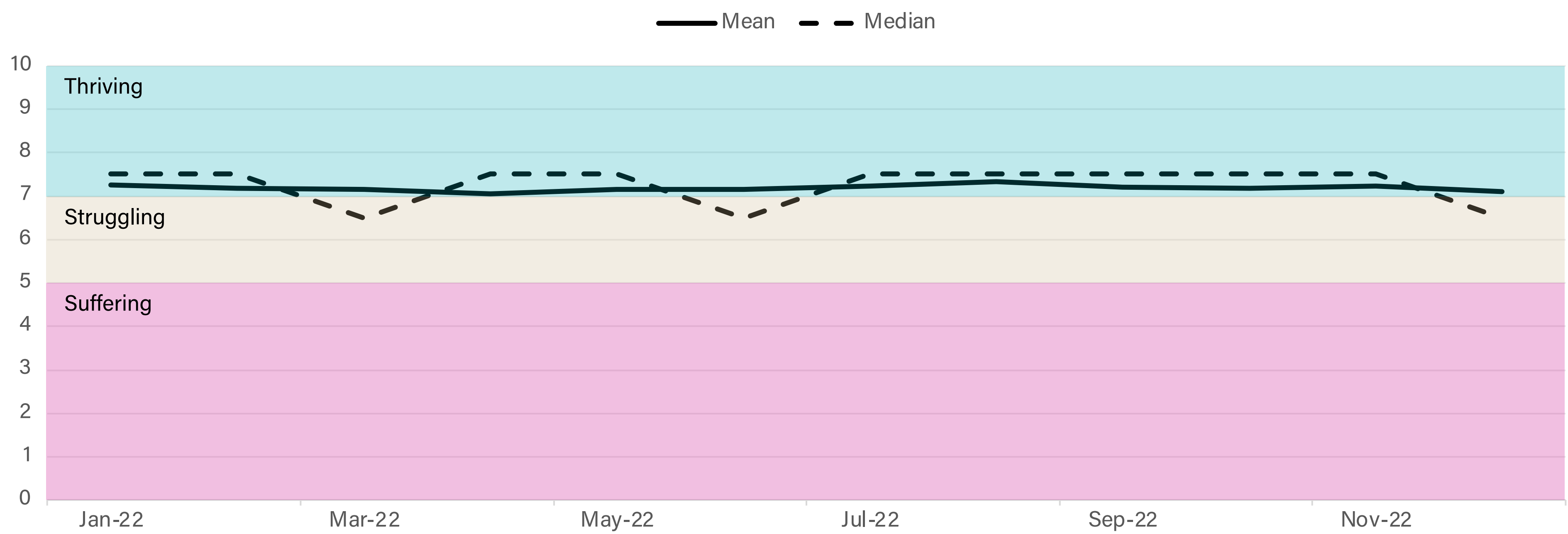


FOOD SATISFACTION

Are Americans satisfied with their diets?

Respondents were asked to score their own diet on a 0-10 scale, with top of that scale representing their ideal diet.[4] Consumer ratings of their diet are flat for the year, averaging a rating of 7.2 from January to December (**Figure 14**). Based on how we have stratified the scale, this rating puts the average consumer over the threshold of the thriving (7-10) range. This consistency in wellbeing is also noticeable in **Figures 15 & 16**, where about 87-89% of consumers have reported being rather or very happy with both their diets and their lives. These measures demonstrate that, while the U.S. food environment may be criticized for rising prices or an abundance of unhealthy options, American consumers are largely happy with the food options that continue to be readily available to them.

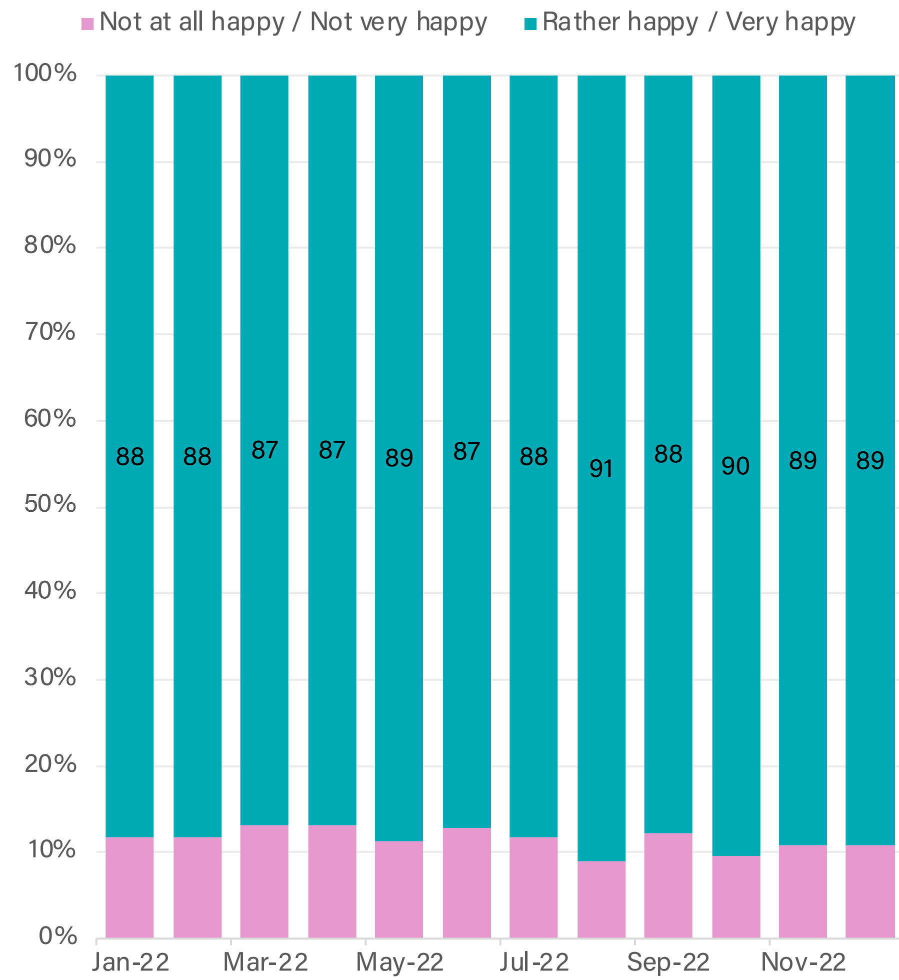
Figure 14. Average Diet Well-Being Rating (0-10 Scale), January - December 2022



FOOD SATISFACTION

Figure 15. Consumer Diet Happiness, January - December 2022

Figure 16. Consumer Life Happiness, January - December 2022



CONSUMER BEHAVIORS

How are Americans navigating their food environment?

We find very stable food behaviors among Americans over the course of the year. On average, about a third of adults eat at least one meal a day at home (**Figure 17**). Another 10% say they are vegetarian or vegan (**Figure 18**). Furthermore, **Figure 19** demonstrates no positive or negative trends in the frequency of common shopping and eating habits. Consumers tend to check expiration dates more often than not. They also take steps to limit food waste at home but don't tend to compost. Shoppers report choosing wild-caught fish or grass-fed beef sometimes but won't commonly pick plant-based proteins over animal proteins.

Notably, there has been a decline in the share of consumers who cannot find a specific product at the grocery store—which has fallen from 25% in January to 14% in December (**Figure 20**). Chicken is the most common item that has been hard to find this year, followed by dairy, eggs, and some grains. There also appears to be seasonality in whether or not consumers limit foods in their diets (**Figure 22**). This share increased during the summer months than again has risen at the end of the year as people may presumably be making New Year's resolutions. By far, consumers name sugar as the most common item that they want to limit (**Figure 23**).

Figure 17. Share of Consumers who Eat Home-cooked Meals Each Week, January - December 2022

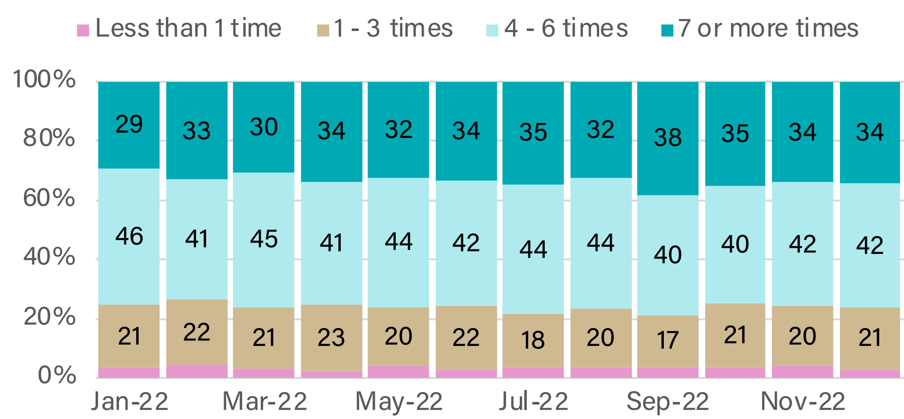
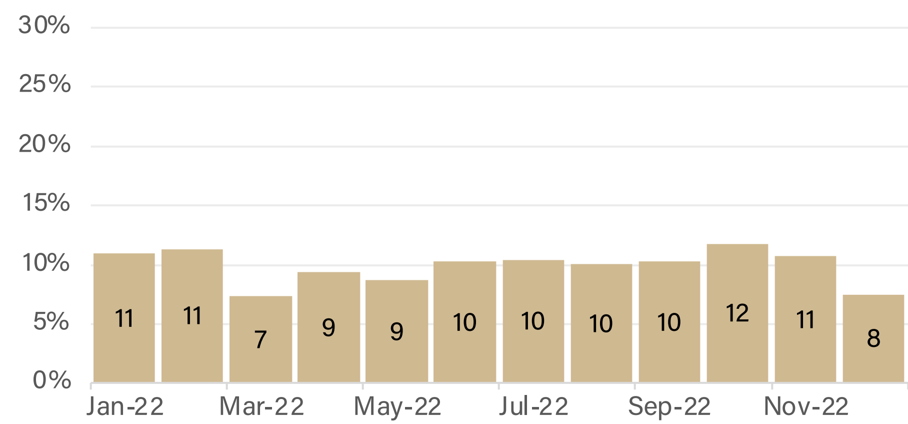


Figure 18. Share of Consumers who Self-Identify as Vegetarian or Vegan, January - December 2022



CONSUMER BEHAVIORS

Figure 19. Frequency of Consumer Shopping and Eating Habits, January - December 2022

	January		March		May		July		September		November	
Chose generic foods over brand name foods	3.2	3.2	3.4	3.4	3.3	3.4	3.4	3.4	3.4	3.4	3.3	3.3
Chose local foods over non-local foods	3.1	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0
Chose wild-caught fish over farm-raised fish	2.9	3.0	3.0	3.0	3.1	2.9	2.8	2.9	3.0	2.9	2.9	2.9
Chose grass-fed beef over conventional beef	2.9	3.0	3.0	2.9	3.0	2.9	2.8	2.9	3.0	2.8	2.8	2.8
Chose cage-free eggs over conventional eggs	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.9	2.9	2.8	2.8	2.8
Chose organic foods over non-organic foods	2.7	2.8	2.7	2.8	2.7	2.6	2.7	2.8	2.8	2.7	2.7	2.7
Chose plant-based proteins over animal proteins	2.6	2.5	2.5	2.6	2.5	2.5	2.5	2.6	2.5	2.5	2.4	2.5
Checked the use-by/sell-by date at the store	4.0	4.0	4.0	4.0	4.0	4.1	4.0	4.0	4.0	4.0	3.9	4.0
Checked the nutrition label before buying new foods	3.4	3.5	3.4	3.5	3.5	3.4	3.4	3.4	3.5	3.4	3.3	3.4
Checked for natural or clean labels	3.0	3.1	2.9	3.1	3.1	3.0	3.0	3.0	3.1	3.0	2.9	3.0
Checked for food recalls	3.0	3.0	2.9	2.8	3.0	2.9	2.9	2.9	2.9	2.8	2.7	2.8
Checked where my food originated	2.9	3.0	2.8	3.0	3.0	2.9	2.9	2.9	3.0	2.9	2.8	2.8
Checked how my food was produced	2.8	2.9	2.8	2.9	2.8	2.7	2.7	2.9	2.9	2.8	2.7	2.7
Checked for GMO ingredients	2.8	2.9	2.8	2.9	2.9	2.7	2.8	2.9	2.9	2.8	2.7	2.7
Took steps to reduce food waste at home	3.8	3.7	3.8	3.8	3.8	3.7	3.8	3.7	3.8	3.7	3.6	3.7
Recycled food packaging	3.5	3.6	3.5	3.6	3.4	3.3	3.5	3.6	3.6	3.6	3.4	3.5
Threw away food past the use-by date	3.3	3.3	3.3	3.3	3.2	3.4	3.3	3.2	3.2	3.2	3.1	3.2
Composted food scraps	2.4	2.6	2.5	2.5	2.4	2.3	2.3	2.5	2.4	2.5	2.3	2.3
Ate fruits and vegetables without washing them	2.3	2.4	2.4	2.3	2.4	2.2	2.2	2.3	2.3	2.3	2.2	2.2
Ate raw dough or batter	2.0	2.1	2.1	2.0	2.0	1.9	1.9	1.9	2.0	2.0	1.9	1.9
Ate rare or undercooked meat	2.0	2.1	2.1	2.0	1.9	1.9	2.0	2.1	2.0	2.0	2.0	1.9

Mean Score	
5	Always
4	Often
3	Sometimes
2	Rarely
1	Never

CONSUMER BEHAVIORS

Figure 20. Share of Consumers who Report Being Unable to Find a Specific Food Product, January - December 2022

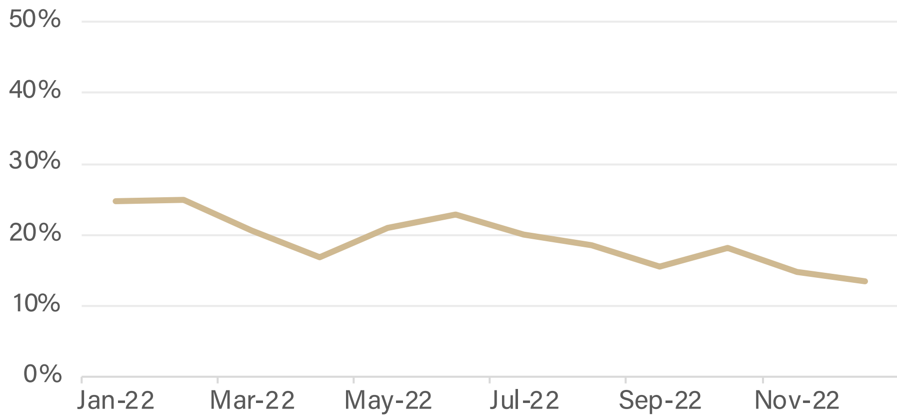


Figure 21. Top Food Products Consumers Report Being Unable to Find, January - December 2022

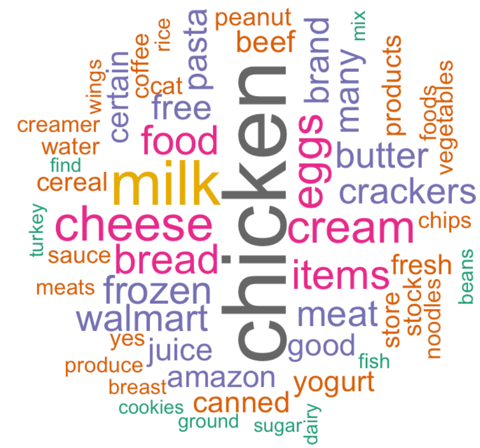


Figure 22. Share of Consumers who Report Limiting their Intake of a Specific Food Product, January - December 2022

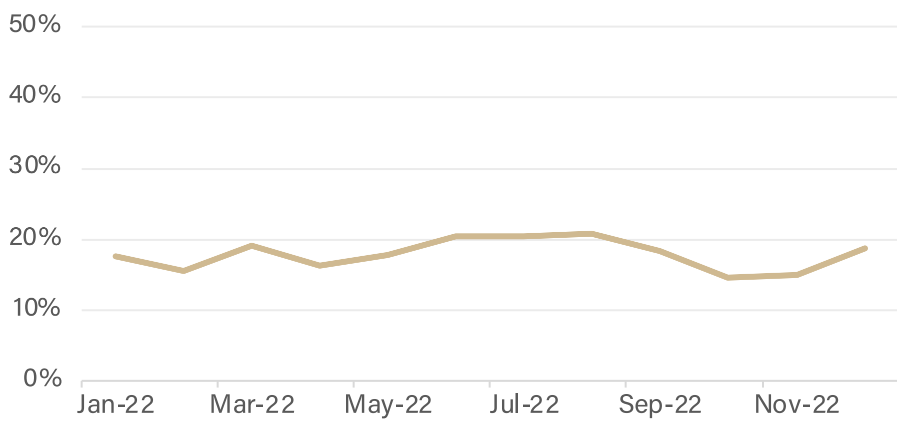
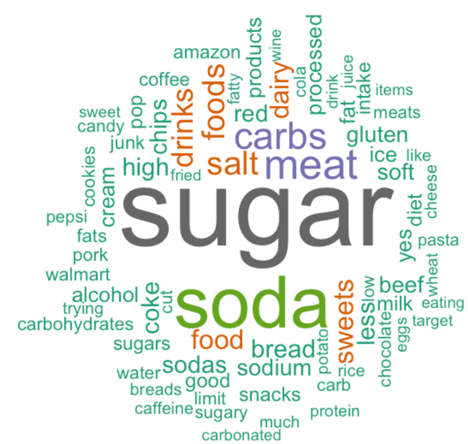


Figure 23. Top Food Products Consumers Report Limiting in their Diets, January - December 2022

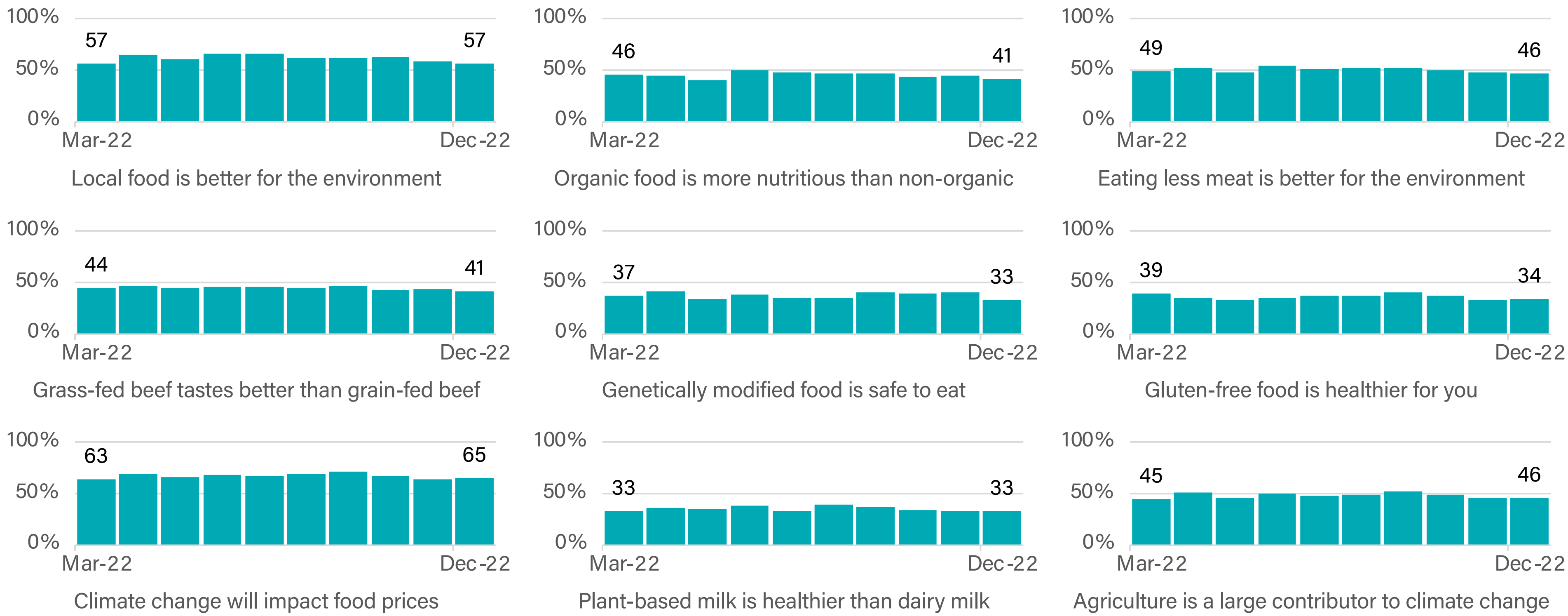


CONSUMER BELIEFS

What do Americans believe about their food and food system?

We compare monthly agreement with statements about the food system (**Figure 24**). Though there exists some monthly variation, these results show no significant positive or negative trends in agreement. The beliefs that local food is better for the environment and that climate change will impact food prices are the only statements which cosistently receive over 50% agreement. As noted previously, the belief that GMOs are safe to eat continues to be one of the least popular beliefs despite a scientific consensus that supports this claim.

Figure 24. Share of Consumers who 'Somewhat Agree' or 'Strongly Agree' with Claims about Food and Nutrition, March - December 2022



CONSUMER TRUST

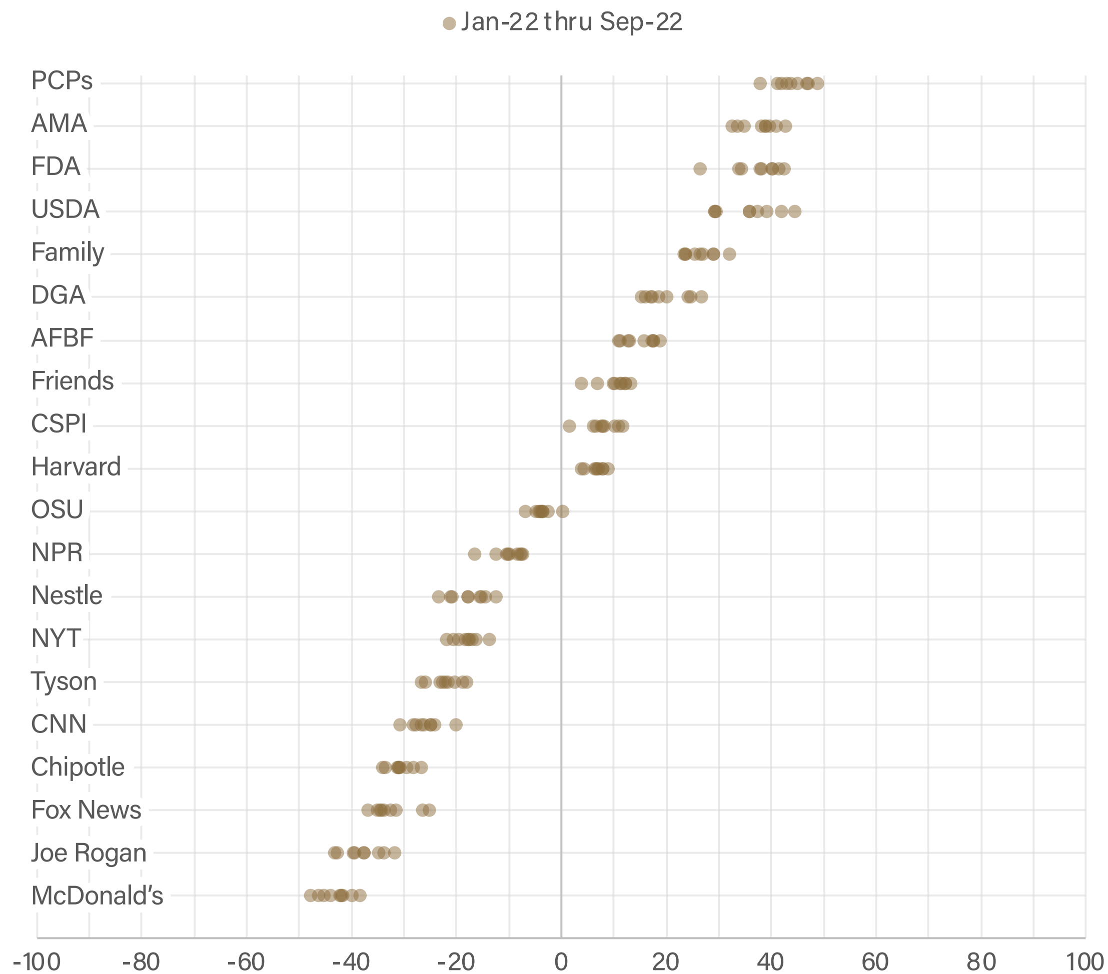
Who do Americans trust?

We asked survey respondents to select their five most trusted and five least trusted sources of food-related information and scored these sources on a Trustworthiness Index.

Over the nine months of survey data, primary care physicians (PCPs) are the most trusted sources of information while McDonald's is the least trusted source (**Figure 25**). Medical professionals, federal agencies, and nonprofit organizations enjoy more trust while food companies and news organizations suffer from less trust. Consumers also appear to have net neutral trust in universities, ranking them as neither the most trusted nor the least trusted.

Trust in surveyed institutions is fairly stable over time—largely staying within a 10 point range. The exceptions are the Food and Drug Administration (FDA) and the Department of Agriculture (USDA), which experienced over 15 point swings during the year. According to the index, both the FDA and USDA were up in September from January but had experienced rises and dips throughout the year.

Figure 25. Trustworthiness Index of Food Information, January - September 2022

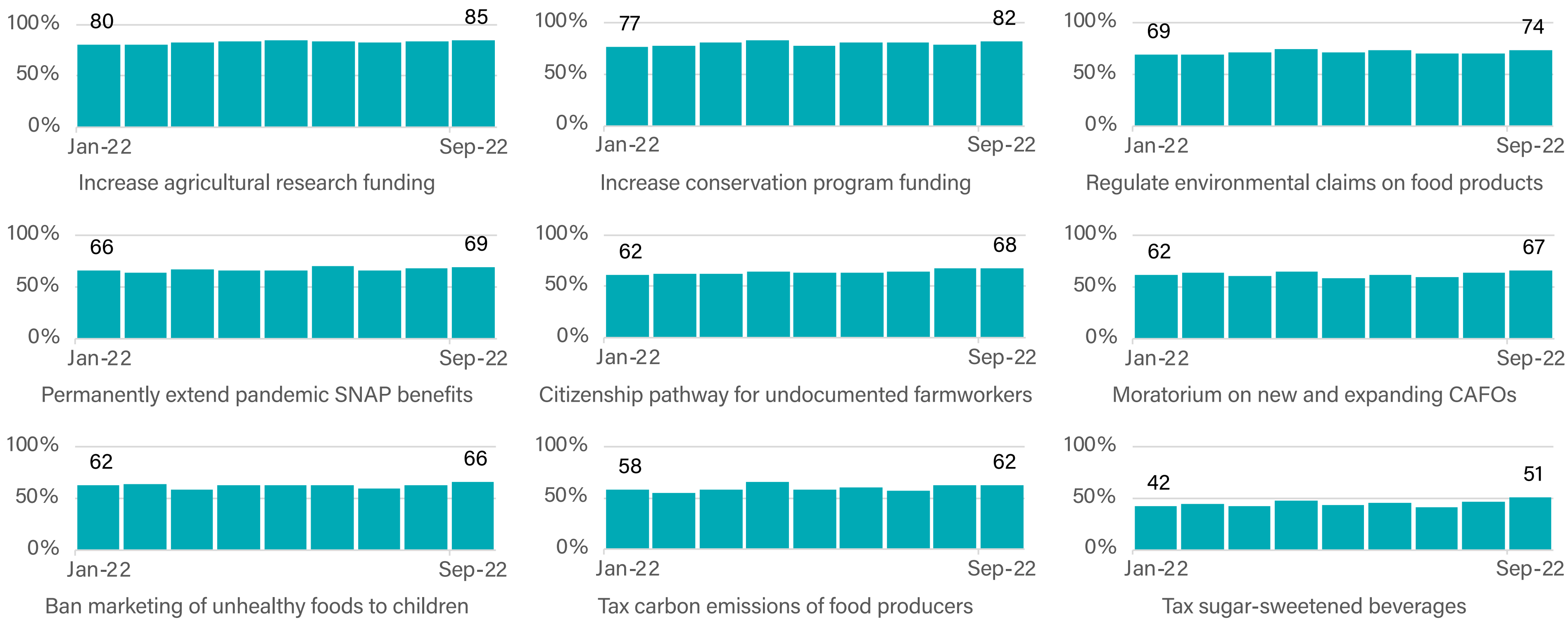


FOOD POLICY

Where do Americans stand on food policy?

From January to September, we see small increases in support for every surveyed policy, although these changes do not necessarily indicate a large shift in the popularity of any one policy (**Figure 26**). Increasing federal funding for both crop breeding research and climate-sensitive farm practices remains, by far, the most popular policies. In contrast, taxing sugar-sweetened beverages has remained largely unpopular but could be increasingly viewed as favorable. Most other policies enjoy about two-thirds support.

Figure 26. Favorable Support for Food and Agriculture Policies, January - September 2022



AGRICULTURE

What do Americans think are the best approaches to agriculture?

In October, Apollo Academic Surveys, with the help of William Masters at Tufts University, asked members of the American Society of Agronomy, the American Society of Animal Science, and the Agricultural and Applied Economics Association (i.e., the experts) about their views on agriculture. In turn, we asked a subset of their questionnaire to consumers so we could understand whether the opinions of experts have percolated through the general public. The responses from our sample of the general population are presented here.

Figure 27 shows that over 50% of adults rank climate change as the first or second most significant threat to U.S. farm production while biodiversity loss is of least concern—not unlike the experts. Less clear priorities emerge with regards to threats to American wellbeing as greenhouse gas emission, crop chemicals, antibiotic resistance, and food manufacturing all rank in the top 2 to a similar degree (**Figure 28**). Notably, while animal welfare ranks lowest, concern for this issue is still greater than that expressed by the experts.

Furthermore, where farm diversification is clearly viewed by the experts as the leading agricultural strategy for improving sustainability, consumers think local and organic food production is equally, if not more, effective (**Figure 29**). Similarly, nearly 50% of consumers also think that more restrictive standards on GMOs would improve the wellbeing of Americans, while 72% of experts say this action would worsen the long-term wellbeing of the country.

Question 1 (Figure 27): What do you believe are the greatest threats to the continued ability of U.S. farmers to produce food for Americans and the world, over the next 20-30 years?

Question 2 (Figure 28): What do you believe are the greatest threats to the overall wellbeing of Americans caused by how the U.S. food supply is produced, over the next 20-30 years?

Question 3 (Figure 29): On balance, for the sustainability of agricultural production over the coming 20-30 years, what do you expect would be the effect of...

Question 4 (Figure 30): On balance, for the wellbeing of Americans, taking account of how changes would affect all of our concerns, what do you expect would be the effect of...

AGRICULTURE

Figure 27. Greatest Threats to U.S. Farm Production Ranked by Consumers, December 2022

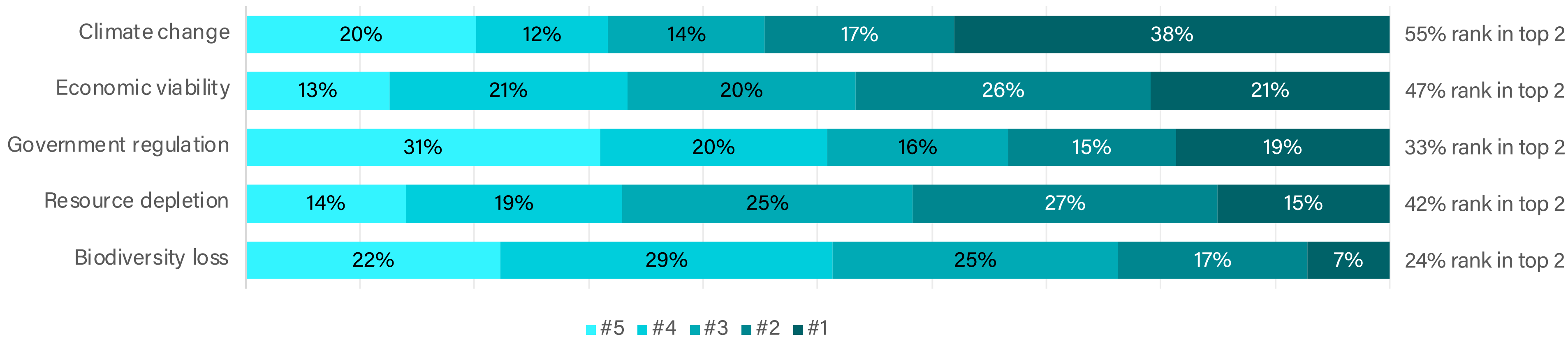
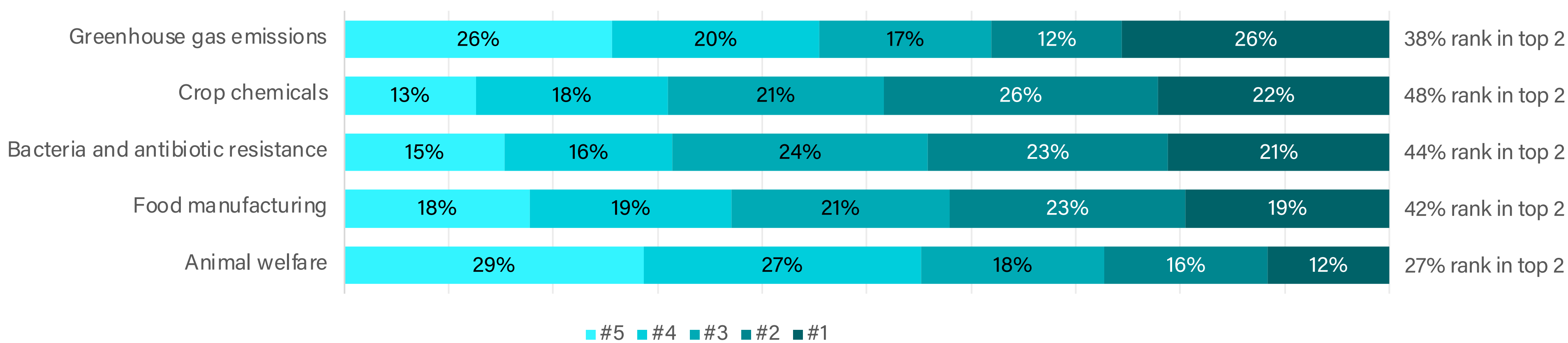


Figure 28. Greatest Threats from Food Production to American Wellbeing Ranked by Consumers, December 2022



AGRICULTURE

Figure 29. Effect of ________ on the Sustainability of Agricultural Production, December 2022

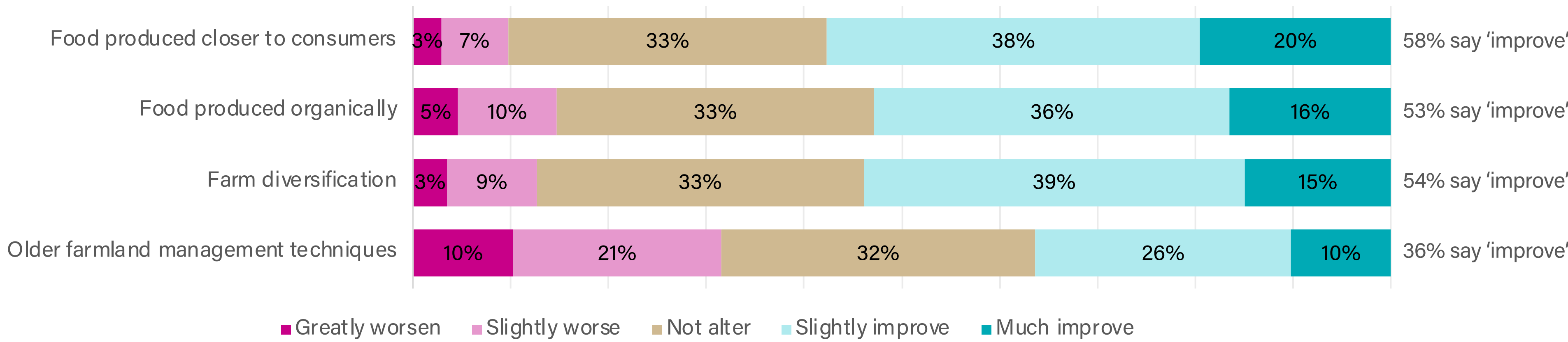
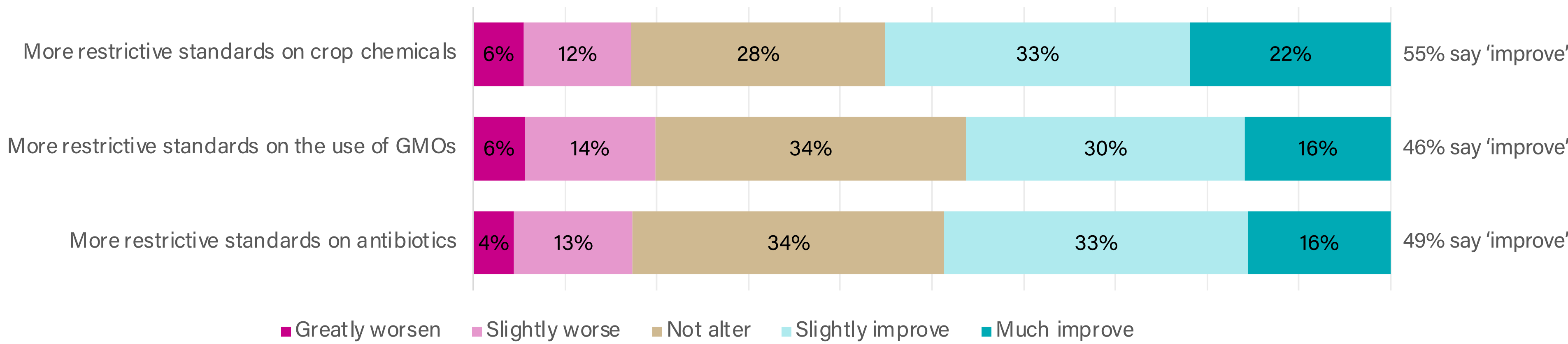


Figure 30. Effect of ________ on the Wellbeing of Americans, December 2022



ENDNOTES

1 Data were collected from an online panel maintained by the firm Dynata over a two-day period from December 19-21, 2022. The eligible population included U.S. adults ages 18+. A weighting method called iterative proportional fitting—or raking—was applied to ensure a demographically balanced sample by age, sex, race, census region, income, and SNAP participation. Every respondent from the previous month was re-contacted and asked to take the survey again. About 57% of November's sample participated this month, thus the rest of the sample was filled in with a new pool of respondents. Data collection for every survey begins on the third Monday of each month, unless otherwise dictated by holidays or extenuating circumstances.

2 Food at home (FAH) refers to food sales meant for home or off-site consumption and the value of donations and non-market acquisitions, which is acquired from outlets such as grocery stores, convenience stores, direct sales, etc. Food away from home (FAFH) refers to food sales meant for immediate consumption, federal food programs, and food furnished as an ancillary activity, which is acquired from outlets such as restaurants, bars, schools, etc.

3 High or marginal food security (i.e., food secure): 0-1 reported indications of food-access problems; little or no indication of change in diet or food intake. Respondents who reported an annual household income above 185% of the Federal poverty line were also screened as having high food security. This determination was made according to research by Ahn et al. (2020), which demonstrates that using a modified income-based screening procedure for internet surveys better approximates the government estimates of food insecurity. Low food security (i.e., food insecure): 2-4 reported indications of reduced quality, variety, or desirability of diet; little or no indication of reduced food intake. Low food security (i.e., food insecure): 2-4 reported indications of reduced quality, variety, or desirability of diet; little or no indication of reduced food intake.

4 This scale is based on the Cantril Scale used in Gallup's World Poll to assess well-being and happiness around the world. Thus, we use the same validated conceptual labels—thriving, struggling, and suffering—to group responses.