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RECIPES FOR WELLBEING REPORT

Ando Foundation/Nissin Food Products

The First Global Study on Food Enjoyment, Healthy Eating, Choices in Types of Food and Subjective Wellbeing



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CHAPTER 1

Introduction and Motivation

People need to eat to live, but understanding their eating habits — their food preferences and why they eat the types of food they do — can provide important insights into the quality of their lives!¹

While past research has failed to coalesce around a single theory that explains the eating preferences and behaviors of individuals, the research agrees on one thing: People’s eating preferences and behaviors are complicated and shaped by factors, circumstances and motivations that are both in and out of their control.²

Elements which are out of people’s control include the inability to afford certain food items or accessibility-related issues — either due to larger supply chain problems or because people live in a so-called “food desert” where there are few or no nearby grocery stores.³ People who may not have enough time, such as those who work while also juggling familial responsibilities, can have narrowed food options, given the preparation and cooking time involved with nutritious and flavorful meals.

Taste is a paramount concern — people crave a delicious meal. A 2020 Eurobarometer survey found that a majority of individuals living in the European Union cited taste as the most important reason that they buy food.⁴ Other personal concerns influence what individuals will or will not eat, including health considerations, cultural heritage, or religious or moral values.^{5,6}

1 *The factors that influence our food choices.* (2006, June 6). EUFIC. [https://www.eufic.org/en/healthy-living/article/the-determinants-of-food-choice#:~:text=The%20Pan%2DEuropean%20Survey%20of,to%20eat%20\(29%25\)](https://www.eufic.org/en/healthy-living/article/the-determinants-of-food-choice#:~:text=The%20Pan%2DEuropean%20Survey%20of,to%20eat%20(29%25))

2 Reddy, G., & Van Dam, R. M. (2020). Food, culture, and identity in multicultural societies: Insights from Singapore. *Appetite*, 149, 104633. <https://doi.org/10.1016/j.appet.2020.104633>

3 Food Empowerment Project. (n.d.). *Food deserts**. <https://foodispower.org/access-health/food-deserts/#:~:text=Food%20deserts%20can%20be%20described,stores%20within%20convenient%20traveling%20distance>

4 Kantar. (2020). Making our food fit for the future – new trends and challenges. *Eurobarometer*. <https://europa.eu/eurobarometer/surveys/detail/2241>

5 Kapur, K., & Dunning, T. (2008). A global survey of eating preferences, dietary habits and food beliefs. *Journal of Diabetes Nursing*, 12(3). <https://diabetesonthenet.com/wp-content/uploads/jdn12-3pg109-113-1.pdf>

6 Sobal, J., & Bisogni, C. A. (2009). Constructing food choice decisions. *Annals of Behavioral Medicine*, 38(S1), 37–46. <https://doi.org/10.1007/s12160-009-9124-5>

Much of the existing research that attempts to grapple with the question of why people eat what they eat has centered on the consequences of our collective choices, including public health problems that stem from unhealthy diets, diabetes, heart disease and obesity.⁷ Food security, an important humanitarian challenge, is another reason to study eating habits and choices, given the obvious link between food insecurity and dietary behaviors.⁸ Still another consideration is the environmental impact of how societies get their food, a topic that is now receiving greater attention in the context of climate change.⁹

While these are critical issues, one area of focus that is often overlooked is how people's eating preferences and behaviors are related to how they feel about their overall quality of life, known as subjective wellbeing. There is strong reason to believe that eating enjoyable food can provide at least a momentary boost in one's feeling of contentment, but relatively few studies have considered what the long-term effects of eating well might be on subjective wellbeing.

To answer this question, the Ando Foundation/Nissin Food Products partnered with Gallup to develop and field the Satisfaction With Food Enjoyment and Variety Survey Module. This module was designed to facilitate a comparison across countries and regions and therefore fielded in over 140 countries or areas as part of the larger Gallup World Poll in 2022.

The results of this groundbreaking survey provide fresh insights into what people around the world think about the food they regularly eat.

The Ando Foundation/Nissin Food Products was interested in addressing a major question with this survey:

Is there a relationship between individual eating attitudes and behaviors, and subjective wellbeing?

Previous research suggests that the current understanding of the major drivers of subjective wellbeing are incomplete and leave out an important facet of life — eating — and how people feel about their choices and actions related to this necessary but rewarding activity.

This report's central finding: Individuals who feel like they have a variety of choices in their food options and consume food they find enjoyable and nutritious are significantly more likely to have higher subjective wellbeing than those who do not feel this way about their food, even when controlling for other factors which are known to shape subjective wellbeing, such as income, education and age.

Before exploring this conclusion more deeply (as will be done in [Chapter 3](#)), it's important to introduce the Ando Foundation/Nissin Food Products Satisfaction With Food Enjoyment and Variety Survey Module.

7 World Health Organization, United Nations Children's Fund (UNICEF) & Food and Agriculture Organization of the United Nations. (2021). *Report of the technical consultation on measuring healthy diets: concepts, methods and metrics: virtual meeting, 18–20 May 2021*. World Health Organization. <https://apps.who.int/iris/handle/10665/351048>. License: CC BY-NC-SA 3.0 IGO

8 Mello, J. A., Gans, K. M., Risica, P. M., Kirtania, U., Strolla, L. O., & Fournier, L. (2010). How is food insecurity associated with dietary behaviors? An analysis with low-income, ethnically diverse participants in a nutrition intervention study. *Journal of the American Dietetic Association*, 110(12), 1906–1911. <https://doi.org/10.1016/j.jada.2010.09.011>

9 Fasman, J. (2021, September 28). Technology can help deliver cleaner, greener delicious food. *The Economist*. <https://www.economist.com/technology-quarterly/2021/09/28/technology-can-help-deliver-cleaner-greener-delicious-food>

Section 1.1 About the Inaugural Ando Foundation/Nissin Food Products Satisfaction With Food Enjoyment and Variety Survey Module

The three questions included in this study measure key aspects of people’s satisfaction with the food they eat, including whether they mostly enjoyed the food they ate in past seven days (referenced as “food enjoyment” or “enjoyment of food” throughout this report), thought they ate mostly healthy and felt like they had lots of choices in the types of food they ate each day.

Respondents are asked to focus on the “past 7 days,” when answering each question to better understand how people assess their eating habits in relative real time.

This time frame can be reasonably interpreted as how people rate different parts of their eating habits in *an average week*, even if this claim almost certainly would not apply to every single individual interviewed.

TABLE 1
Ando Foundation/Nissin Food Products Satisfaction With Food Enjoyment and Variety Survey Module

Question Wording Thinking about the past 7 days...	Response Options
Would you say you mostly enjoyed the food you ate, or not?	Yes
Do you think the food you ate was mostly healthy, or not?	No
Did you feel you had a lot of choices in the types of food you ate each day, or not?	(Don't know/No answer)*

*“Don’t know” was not offered as an explicit response option but was accepted as a valid answer if offered by the respondent.

Taken together, these questions touch upon distinct, though related, aspects of an individual's feelings and experiences with respect to food. Moreover, even though these questions highlight one's relationship with food, the underlying three concepts play a significant role in shaping overall wellbeing.



“Food enjoyment” assesses people’s positive experience with their food. The concept of enjoyment, which falls under experiential or affective wellbeing, is considered as one of the major components of wellbeing in the classical framework.



Eating “healthy” food — commonly understood as being nutritiously balanced, though the term “healthy” was not defined to respondents during the interview process — is also a core ingredient in terms of developing a sustained sense of satisfaction with one’s diet.



Having a variety of “choices in the types of food” available to eat is important for two reasons: Eating a diverse diet is considered by many public health experts and nutritionists as essential to eating healthy¹⁰ and therefore, having various choices in types of food can potentially indicate that a person has a healthy diet. In addition, variety is vital for maintaining or boosting one’s overall enjoyment in eating, since continuous repetitions can make even the most delicious dishes become dull. “Interest and boredom” speak to one important component of wellbeing, according to psychologist Norbert Schwarz, who advised on the Gallup World Poll measures. Lack of interest or feelings of boredom have a negative influence on overall wellbeing. Similarly, those with limited food options may find their diet less fulfilling.

The three questions are also interrelated, both from a statistical and a conceptual point of view. For instance, a wide range of “food choices” can directly enhance “food enjoyment” and the perception of “food healthiness.” This aspect is further discussed in [Section 3.1](#) of the report. Our analysis also revealed that when combining these three questions into an index, the index was a strong and statistically significant predictor of subjective wellbeing. This will be further discussed in [Section 3.2.2](#).

It bears repeating: This is the first survey to ask people around the world their feelings about the food they eat — including those in low- and lower-middle-income countries where this type of research is especially scarce. [Chapter 2](#) of this report will review the results of this blockbuster survey, as well as investigate and interpret where (countries, regions or types of communities) and among whom (different demographic subgroups such as gender, age and level of education) eating evaluations differ most sharply. However, that is not the only analytical goal of this report.

¹⁰ FAO, IFAD, UNICEF, WFP and WHO. (2023). *The state of food security and nutrition in the world 2023. Urbanization, agrifood systems transformation and healthy diets across the rural–urban continuum*. Rome, FAO. <https://doi.org/10.4060/cc3017en>

Section 1.2 Feeding Happiness? Unraveling the Relationship Between Food Satisfaction and Subjective Wellbeing

The central research question fueling this study is whether eating well can lead to living well. That is, if people who regularly eat enjoyable, healthy food and feel like they have lots of choices in the types of food they eat in fact have higher subjective wellbeing.

This analysis has powerful implications for not only how we think about individual eating preferences and behaviors, but also our current understanding of the drivers of subjective wellbeing.

This research is especially valuable given the sheer number of countries included in the study — over 140 in total, drawn from every region and level of country income.

One tantalizing conclusion is that food satisfaction is indeed an important ingredient when it comes to subjective wellbeing, even after taking into account other salient factors that past research has shown to have a positive or negative relationship with people's happiness.

Put another way, food satisfaction (as embodied by these three survey questions) makes its own *unique* contribution in explaining subjective wellbeing.





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Food Enjoyment, Healthy Eating and Choices in Types of Food: Findings From Around the World

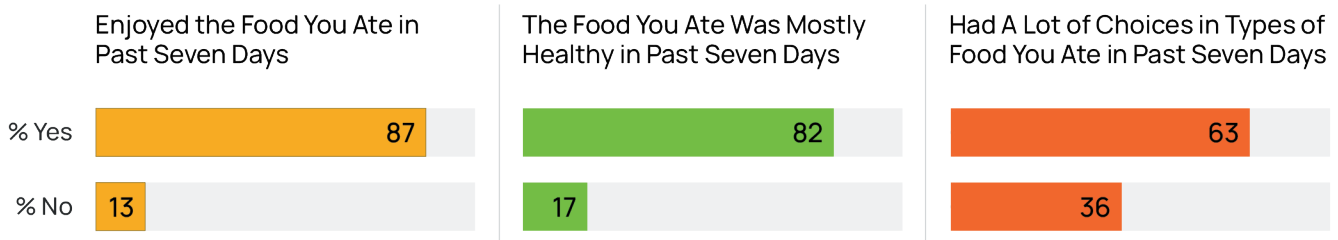
Section 2.1 Global Findings: Enjoyment of Food Outpaces Perceptions of Eating Healthy or Having Lots of Choices

The Irish playwright George Bernard Shaw once wrote that “there is no love sincerer than the love of food,”¹¹ a sentiment that is widely shared by people across the world, according to the results of the first-of-its-kind Ando Foundation/Nissin Food Products survey. Nearly nine in 10 (87%) adults worldwide said that they enjoyed the food they ate in the past seven days, while the remaining 13% said this was not the case.

A slightly smaller majority said they felt like the food they ate in the past seven days was “mostly healthy,” at 82%. By comparison, a little more than six in 10 (63%) people worldwide said they felt they had a lot of choices in the types of food they ate in the past seven days, while 36% felt otherwise.

11 Shaw, G. B. (1903). *Man and superman*. <https://www.gutenberg.org/files/3328/3328-h/3328-h.htm#:~:text=There%20is%20no%20love%20sincerer%20than%20the%20love%20of%20food>

FIGURE 1
Global Topline Results



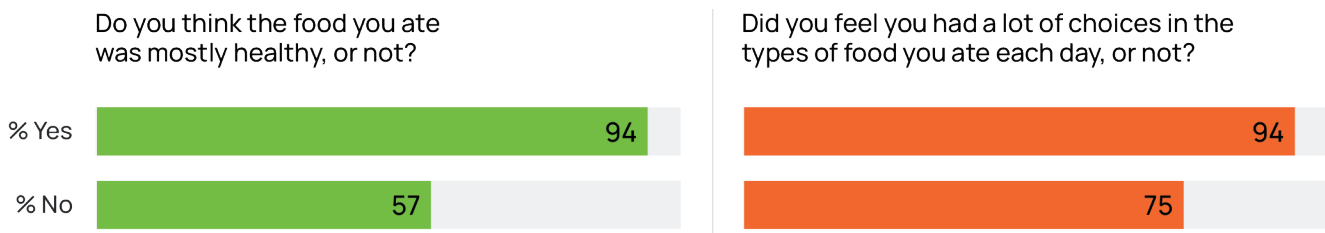
Totals might not always add up to 100% due to rounding as well as the proportion of respondents indicating the “Do Not Know” or “Refuse to Answer” response options.

These results raise intriguing questions about the relationship between these dimensions of food satisfaction. Enjoyment of food outpaces perceptions of healthiness, albeit by a slim but statistically significant margin. And despite resounding majorities saying they mostly enjoyed the food they ate in the past seven days and believing it was mostly healthy, notably fewer — yet still a majority — felt they had lots of choices. Interestingly, slightly more than half of people who said they did not think the food they recently ate was “mostly healthy” still found their food enjoyable (57%) while three-fourths of those who said they did not have lots of food options also enjoyed their food (75%).

FIGURE 2
Food Enjoyment Still Prevalent Among Those Who Did Not Have Healthy Food or Lots of Choices

Most people who did not think their food was healthy or that they had a variety of choices in the food they ate still “mostly enjoyed” their food.

Of people who said they “mostly enjoyed” the food they ate:



The finding that perceptions of eating healthy and having lots of choice have a relatively limited relationship with respect to food enjoyment is somewhat surprising, but further examination of the data is warranted before drawing any conclusions.

Section 2.2 Regional Findings

Interesting patterns and variations exist by region. Notably, people living in Northern America (96%), Latin America and the Caribbean (96%), Northern, Southern and Western Europe (95%), Southeastern Asia and the Pacific (95%) and Eastern Europe (93%) nearly universally reported enjoying their food. Food enjoyment was slightly lower (between 80% to 90%) in five other regions, including Central and Western Asia (87%), Southern Asia (84%), the Arab States (82%), Eastern Asia (82%) and Northern Africa (81%).

In sub-Saharan Africa, fewer than three in four (72%) said they enjoyed the food they ate in the past seven days, statistically the lowest of any region.

More people said they ate “mostly healthy” in Southeastern Asia and the Pacific (91%) and Northern, Southern and Western Europe (90%), with these areas outpacing all other regions by a considerable and statistically significant margin. On the contrary, perceptions of eating “mostly healthy” were lowest in the Arab States (72%) and sub-Saharan Africa (67%).

Wealthier regions tended to be the places where the greatest percentage of people said they had lots of choices in the types of food they had to eat, including Northern, Southern and Western Europe (85%) and Northern America (82%). Notably, only one region, sub-Saharan Africa, had a majority of people who said they did *not* have access to multiple choices in the types of food they consumed (54%) — just 46% said they had many choices.

In fact, the “choice gap” (i.e., the difference between regions reporting high and low rates of choices in the types of food consumed) between Northern, Southern and Western Europe or Northern America and sub-Saharan Africa is significant — a difference of nearly 40%. This gap brings into question the impact of differences in country income levels and food accessibility across regions, a topic discussed later in this report.

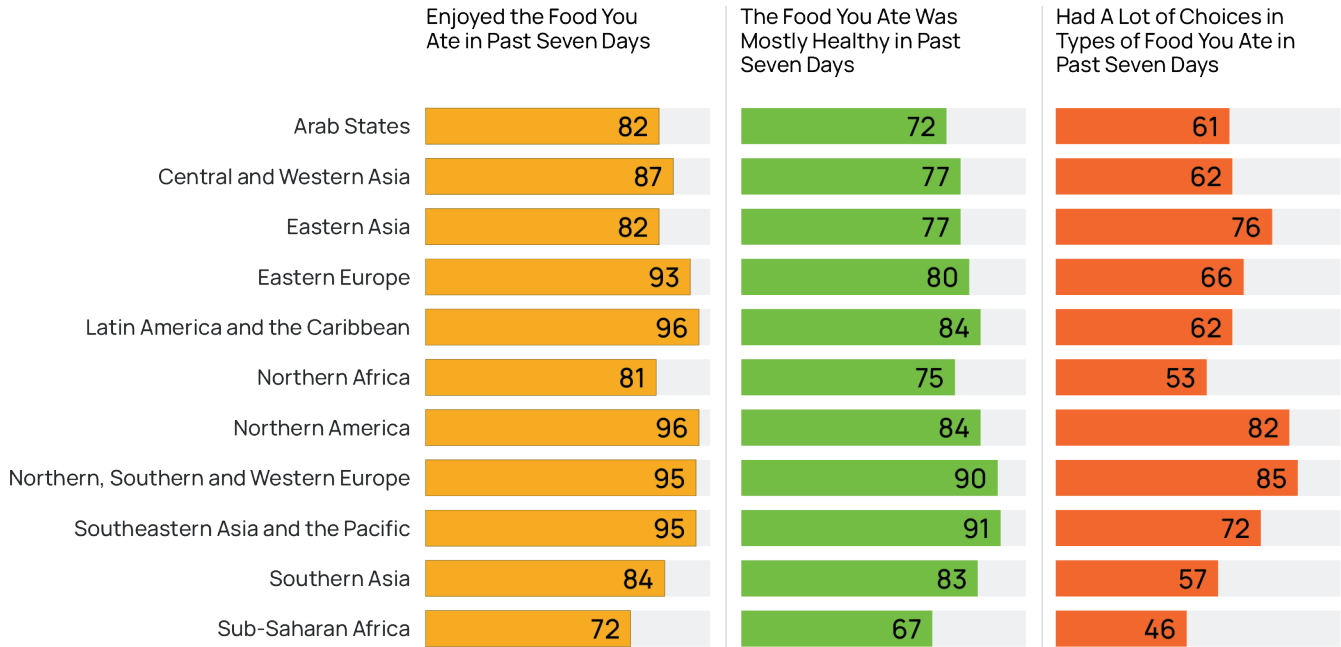
APPROXIMATELY HALF OF RESPONDENTS

in Northern Africa (53%) and sub-Saharan Africa (46%), reported having a variety of choices in the types of food they ate in the past seven days.



FIGURE 3
Regional Topline Results

% Yes



Section 2.3 Country-Level Findings

This section examines the results of the Ando Foundation/Nissin Food Products Satisfaction With Food Enjoyment and Variety Survey Module at the country or area level.¹² While this section generally focuses on the countries and areas that rank the highest or lowest, the full country-level results can be found in the appendix.

Section 2.3.1: Food Enjoyment

In all but one country, most people said they enjoyed the food they ate in the past seven days (in The Democratic Republic of the Congo, this figure was 50%). Therefore, even in those countries or areas which were at the bottom of the list in terms of their food enjoyment rates (see below graphic), more people said they enjoyed their food than not, including The Comoros (54%), Sierra Leone (54%) and Afghanistan (55%). The figures then jump up to 60% or higher for the rest of the lowest-ranked countries.

81% OF INDIVIDUALS IN JAPAN

said they mostly enjoyed the food they ate in the past seven days — ranking relatively low at 104th out of 142 countries globally. Japan's food enjoyment rate ranks the lowest of the 47 high-income countries included in the survey.¹³

FIGURE 4
Top and Bottom 10 Countries for Food Enjoyment

% Who enjoyed the food they ate in the past seven days

Top 10 Countries With Highest Food Enjoyment

Puerto Rico	99
Greece	98
Norway	98
Malta	98
Iceland	98
Kosovo	98
Uruguay	98
Uzbekistan	97
Chile	97
Portugal	97

Bottom 10 Countries With Lowest Food Enjoyment

Bangladesh	64
Chad	63
Niger	62
Benin	62
Mauritania	61
Malawi	60
Afghanistan	55
The Comoros	54
Sierra Leone	54
The Democratic Republic of the Congo	50

While the results in the table are rounded to the nearest whole number (as a percent), the figures were ranked using additional decimal places to distinguish between countries with the same overall rounded total. The rankings do not distinguish statistical significance.

¹² Not all localities included in the 2022 Gallup World Poll are, strictly speaking, countries, hence the reference to "countries or areas." For the sake of brevity, this will frequently be shortened to "countries," but this usage is not making any claim about the situation of any given region.

¹³ Based on a nominal comparison, meaning without taking statistical significance into account. If this is accounted for, Japan is tied with five other countries for the lowest food enjoyment rate.

On the other hand, while most countries or areas that appeared in the top 10 ranking of countries with the highest rates of food enjoyment were European, some notable distinctions appeared in that list. Puerto Rico (99%) was the top country in the world, at least on a nominal basis,¹⁴ with almost every respondent indicating having enjoyed the food they had in the past seven days. However, it should be noted that the difference between the ten countries listed as having the highest level of food enjoyment is marginal, with the difference between the highest (99%) and the lowest (97%) amounting to just 2 percentage points, meaning they are all essentially on par with each other.

Puerto Rico is not only among the top countries or areas in terms of their food enjoyment rate, but this Caribbean island territory also ranks highly on other questions included on the Gallup World Poll, which asked people if they recently experienced certain types of positive emotions — including enjoyment, feeling well-rested, smiling and laughing, learning or doing something interesting, and feeling treated with respect.

These five questions make up the “Positive Experience Index,” which is one measure of wellbeing (see [Chapter 3](#)). In general, Latin American countries or areas dominate the top of the list for feeling the most positive emotions.¹⁵

Puerto Rico very much follows in this tradition, with the island territory boasting a Positive Experience Index score of 80 (the index is calculated between 0 to 100, with a higher score indicating a person felt more positive emotions) — among the highest of all countries or areas surveyed. Furthermore, 84% of people in Puerto Rico said they experienced enjoyment yesterday, again a rate that exceeds most other places. This overall positive disposition about their experiences *in general* may be one reason why people in Puerto Rico report enjoying their experiences *of food* at such high levels.

Across most countries or areas, commanding majorities of people said they enjoyed the food they ate. For the median country, this figure was approximately 92% — meaning the number would be higher in half of the 140+ countries or areas included in the Gallup World Poll.



14 In other words, when not taking statistical significance into account and only comparing the estimates of the respective countries.

15 Clifton, J. (2015, August 27). *Latin Americans lead the world in emotions*. Gallup.com. <https://news.gallup.com/poll/184631/latin-americans-lead-world-emotions.aspx>. Note: The Gallup World Poll also asks a series of questions about negative emotions felt yesterday, and Latin American countries or areas also outpace most other countries on that measure as well.

Section 2.3.2: Perceptions of Eating Healthy

As was the case with the rate of people who said they enjoyed the food they ate recently, African nations largely dominate the bottom 10 countries in terms of the percentage of people who said they ate “mostly healthy” in the last seven days, including Chad (56%), Benin (56%), The Republic of the Congo (53%), Zimbabwe (51%), Lesotho (51%), The Comoros (50%), Madagascar (49%), Sierra Leone (48%) and The Democratic Republic of the Congo (38%).

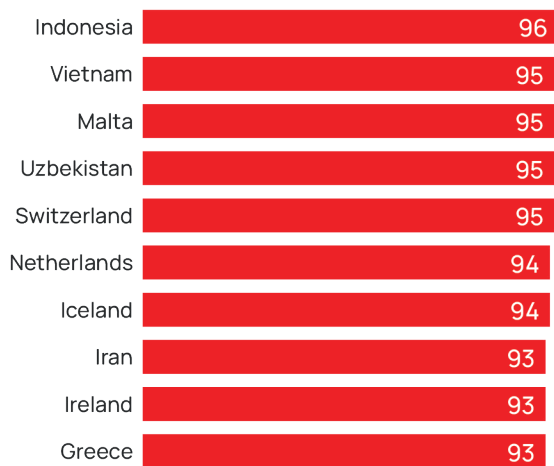
A notable exception is Lithuania, where 56% said the food they ate in the past seven days was “mostly healthy.” Yet just 21% of Lithuanians said they did *not* believe the food they ate recently was “mostly healthy” while another 23% said they did not know or did not answer the question, indicating Lithuanians were less willing or able to render a verdict with respect to this question.

FIGURE 5
Top and Bottom 10 Countries for Eating Healthy Food

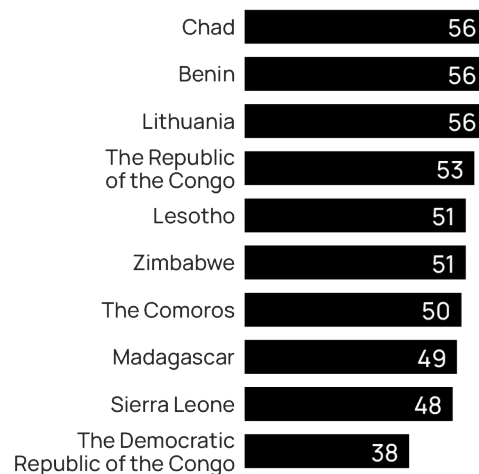
% Who said the food they ate in the past seven days was mostly healthy



Top 10 Countries for Eating Healthy Food



Bottom 10 Countries for Eating Healthy Food



While the results in the table are rounded to the nearest whole number (as a percent), the figures were ranked using additional decimal places to distinguish between countries with the same overall rounded total. The rankings do not distinguish statistical significance.

Meanwhile, Indonesia leads the pack in terms of saying they eat “mostly healthy,” with 96% of people in that country responding this way. Notably, Indonesia also led the Asia Pacific region in the percentage of the age 15+ population who consumes all five recommended food groups as measured by the Global Diet Quality Project, which seems to lend some credence to this survey’s finding.



79% OF RESIDENTS IN JAPAN reported they ate “mostly healthy” foods in the past seven days — ranking 85th out of 142 countries globally.

The Global Diet Quality Project is a joint effort by Gallup, Harvard University (Department of Global Health and Population) and the Global Alliance for Improved Nutrition (GAIN), along with many global stakeholders.¹⁶ This project collects standardized data for indicators of dietary adequacy and protection of health against noncommunicable diseases (NCDs) across countries. It measures the consumption of 29 food groups that were selected based on their relationship to nutrition and health, sustainability and food-based dietary guidelines, and in alignment with United Nations indicators and recommendations. Currently, the Global Diet Quality Project has results available from the 41 countries it surveyed in 2021, 11 of which were in the Asia Pacific.

The country with the

HIGHEST PROPORTION OF EATING HEALTHY

in the past seven days globally was Indonesia — a Southeast Asian island nation with 96% of people indicating eating “mostly healthy” food recently.

Additional research, using data from the Global Dietary Database, which collects, standardizes and harmonizes surveys about individuals’ dietary intake from over 180 countries and areas around the world and uses surveys dating back to at least 1990, found that Indonesia, Vietnam and Iran had the highest score on the “Alternative Healthy Eating Index,” among the world’s most populous 25 countries.¹⁷ Notably, all three of these countries are in this survey’s top 10 of countries or areas in terms of perceptions about eating healthy.

Most other countries at the top of the list are rich nations, with the exception of Uzbekistan, a country with a highly authoritarian system of government, according to Freedom House, a nonprofit organization and human rights watchdog.¹⁸ Perhaps as a result of this environment, people in Uzbekistan tend to provide positive responses to a wide range of questions on the Gallup World Poll, and this same pattern may be occurring here.

IN MOST COUNTRIES OR AREAS, A SIZABLE PERCENTAGE OF PEOPLE

16 Herforth, A., & Beal, T. (2022, October 19). *Global Diet Quality Project measures what the world eats*. Gallup.com. <https://news.gallup.com/opinion/gallup/403376/global-diet-quality-project-measures-world-eats.aspx>

17 Miller, V., Webb, P., Cudhea, F. et al. (2022). Global dietary quality in 185 countries from 1990 to 2018 show wide differences by nation, age, education, and urbanicity. *Nature Food* 3, 694–702. <https://doi.org/10.1038/s43016-022-00594-9>

18 Freedom House. (n.d.). *Uzbekistan: Freedom in the world 2023*. <https://freedomhouse.org/country/uzbekistan/freedom-world/2023>

Yet again, a majority of the countries at the top of the list are European, with some notable exceptions such as Iran (93%), ranking eighth globally. However, the differences between the top 10 countries are statistically insignificant, with only a 3-point gap separating the first and the tenth countries.

In most countries or areas, a sizable percentage of people said the food they ate recently was mostly healthy — though they are not quite as overwhelmingly positive about the healthiness of their food as they are about how much they enjoy it. For perceptions of healthy eating, the median country result was 82%, 10 percentage points below the comparable statistic for food enjoyment.

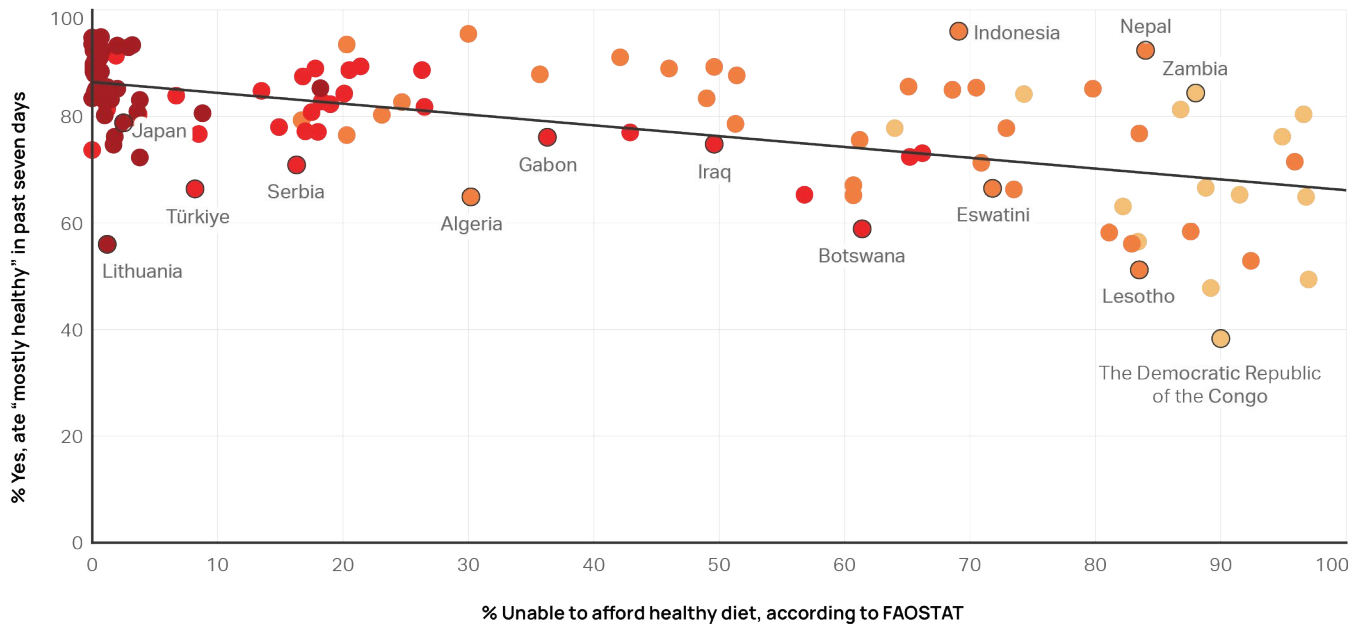
SAID THE FOOD THEY ATE RECENTLY WAS MOSTLY HEALTHY



Nonetheless, the results do align, at least to some degree, with other external sources of data also seeking to measure some concept broadly related (or adjacent) to eating healthy. For instance, the Food and Agriculture Organization (FAO) of the United Nations estimates the percentage of people in a country who *cannot* afford a healthy diet.¹⁹ For the purposes of this measure, the FAO defines the cost of a healthy diet “as the lowest-cost set of items available at each time and place that would meet requirements for each food group specified in food-based dietary guidelines.”²⁰

The FAO estimate has a moderately strong and negative relationship with the percentage of people saying that they ate mostly healthy recently, when comparing the results at the country (or area) level.²¹ This means that, on average, countries where the percentage of people who cannot afford a healthy diet is estimated to be relatively high will tend to have fewer people saying the food they recently ate was healthy.²²

FIGURE 6
Perceptions of Eating Healthy and Inability to Afford a Healthy Diet



The measures are far from perfectly aligned: Countries such as Indonesia and Nepal, where a wide swath of people are, by the FAO’s calculations, unable to afford a healthy diet, nonetheless boast with near unanimity that they ate “mostly healthy” in the past seven days. In Zambia, 88% are projected to be unable to afford a healthy diet, while 84% in turn said they ate “mostly healthy” in the recent past.

19 FAOSTAT. (2023, July 12). *Cost and affordability of a healthy diet (CoAHD)* [Dataset]. <https://www.fao.org/faostat/en/#data/CAHD>

20 Herforth, A., Bai, Y., Venkat, A., Mahrt, K., Ebel, A. & Masters, W.A. (2020). *Cost and affordability of healthy diets across and within countries. Background paper for The state of food security and nutrition in the world 2020*. FAO agricultural development economics technical study No. 9. Rome, FAO. <https://doi.org/10.4060/cb2431en>

21 The Pearson’s correlation coefficient — a measure used to assess to what degree data series are statistically related — is -0.58 for the results of the “mostly healthy” question and FAO estimate of the percentage of people who cannot afford a healthy diet.

22 The measure for the percentage of people who were unable to afford a healthy diet was available for 114 of the 142 countries or areas included in this study, and thus this analysis is based on those 114 entities only.

Why the apparent disconnect? Part of it may have to do with varying interpretations as to what constitutes “healthy” food. The FAO uses a specific definition that, however well developed, is unlikely to register perfectly with individual perceptions. Ideas of what is “healthy” food will differ by culture and context.

Individuals struggling with food scarcity and affordability issues might use different criteria when thinking about how “healthy” they ate.

Researchers and policymakers may benefit from further studies on comparing people’s perceptions about whether they are eating healthy with specific information about the types of food they recently ate, categorized by food group — the type of work done by the previously mentioned Global Diet Quality Project. Future research on this may reveal how cultural, regional, socioeconomic and individual factors influence perceptions of healthy eating. Such research could yield actionable data for crafting more effective, culturally sensitive and targeted public health interventions, nutritional guidelines and food policies.



Section 2.3.3: Feelings of Having Choices in Types of Food

As the regional results suggested, this question varies the most across surveyed countries and areas. Unlike the other two items, in about one in five countries, less than half of people said they felt like they had a lot of choices in the types of food they had in the past seven days.



IN JAPAN, 82% OF RESIDENTS

indicated having many choices in the types of food they ate in the last seven days — ranking 24th out of 142 countries.

This figure was lowest in Afghanistan, where just 11% answered in the affirmative. Civil unrest has thrown the country in political and social turmoil in the last two years, which undoubtedly was a major factor why about nine in 10 people said they did not feel like they had lots of choices in the types of food they ate in the past seven days — a stark finding highlighting the realities of life in Afghanistan in 2022. Lebanon, a country that has observed the most severe rate of inflation in nearly four decades following a harsh economic crisis and currency devaluation, appeared second from the bottom, where three in four respondents indicated not having many choices in the types of food they had in the past seven days.

The rest of the bottom ranks feature countries that are also in turmoil, such as Yemen (32%), which is experiencing violent military conflict along with other African and Middle Eastern states that are experiencing various civil and military unrest.

In contrast, the 10 countries or areas where the greatest proportion of residents felt they had many choices in the types of food they ate in the past seven days tended to be developed countries in Europe, with two exceptions. Vietnam once again makes this list, with 90% of residents saying they had lots of choices in the types of food they eat. In fact, across this entire module, the Vietnamese were highly consistent and positive: At least nine in 10 Vietnamese answered in the affirmative to all three questions, making this one of the most satisfied countries in terms of their eating choices and behaviors.

The other exception is Kuwait, one of the Arab States, where 88% said they had lots of choices in the types of food they ate. Kuwait is a high-income country; moreover, 88% of its residents told the Gallup World Poll that they were “living comfortably” or “getting by” on their present income when being asked for their feelings about household income, a higher rate than all but a few countries or areas. Personal feelings about household income, also called one’s “subjective income,” have a clear relationship with feeling that one has a lot of choice in the types of food one eats, as is discussed later. Those who feel they can live comfortably or at least get by are much more likely to say they have lots of choices in the types of food they eat.

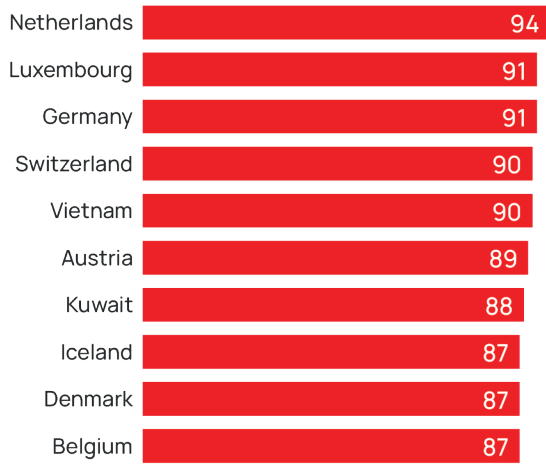
FIGURE 7

Top and Bottom 10 Countries for Having Many Choices in Types of Food

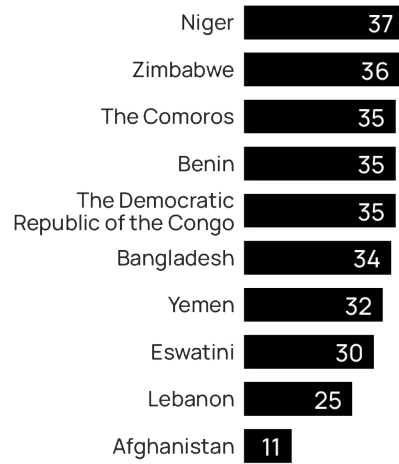
% Who said they had lots of choices in the types of food they ate each day in the past seven days



Top 10 Countries for Having Many Choices in Types of Food



Bottom 10 Countries for Having Many Choices in Types of Food



While the results in the table are rounded to the nearest whole number (as a percent), the figures were ranked using additional decimal places to distinguish between countries with the same overall rounded total. The rankings do not distinguish statistical significance.



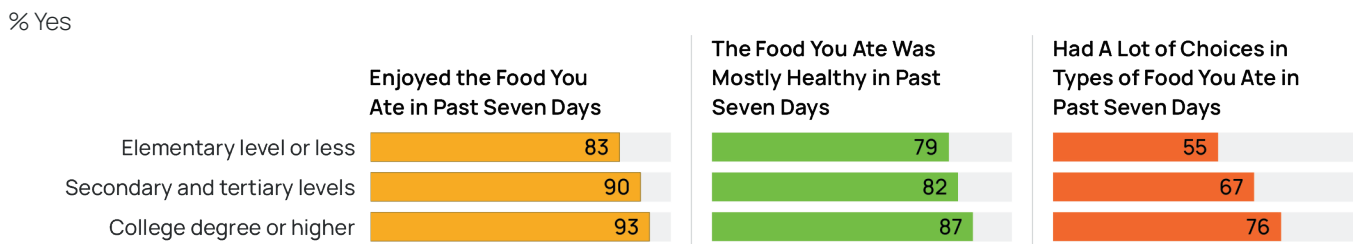
Section 2.4 Differences Across Key Demographic Groups

An uneducated, unemployed, young person who lives with a large family is more likely to have adverse feelings about the food they ate recently — whether they enjoyed it, thought it was healthy or had many choices in the types of food consumed. An analysis of personal attributes — education, age, employment status and household size — found various trends in the responses among those key demographic groups.

However, one fundamental characteristic is notably absent: gender. Though other research has shown that attitudes and behaviors about food-related practices such as cooking are quite divided along gender lines, that is not the case for this survey. At the global level, the attitudes between men and women are virtually equal across all questions.

Education: Individuals who have completed at least four years beyond high school and those with college degrees or higher education were more likely to say they mostly enjoyed the food they recently ate, thought it was mostly healthy and felt they had lots of choices in the types of food they had to eat than those with less education, particularly those in the lowest education group.

FIGURE 8
Food Enjoyment, Healthy Eating and Food Choices, by Education



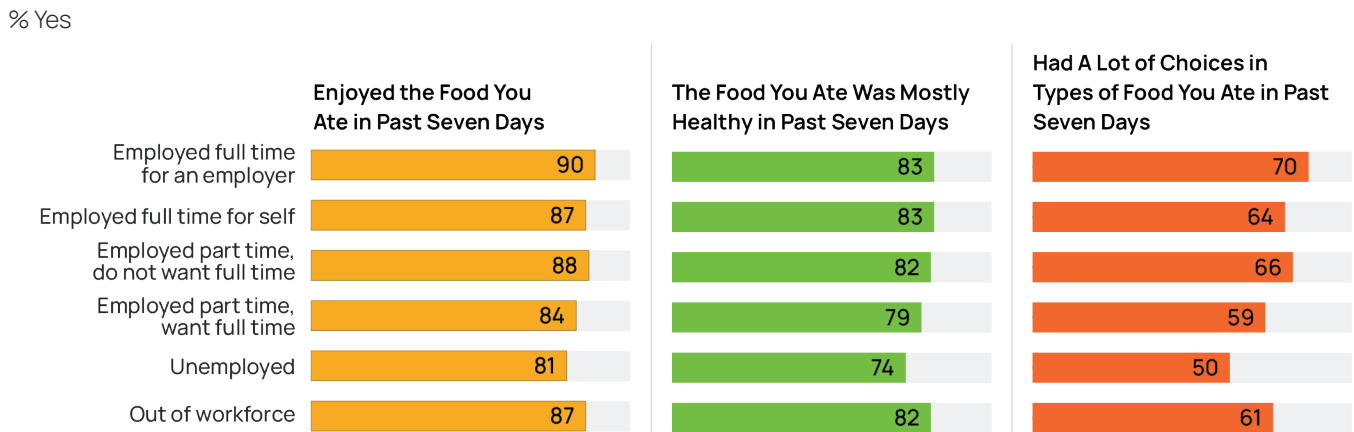
Age Groups: At first glance, the differences across different age groups (15-24, 25-34, 35-49, 50-64 and 65+) appear minor, even inconsequential. But a closer look reveals that there does appear to be a slight, however a bit uneven, trend: As people get older they are more likely to mostly enjoy their food, consider it healthy and feel like they have a variety of choices. The oldest group, those aged 65 and older, were the most likely to answer in the affirmative to all three questions, though by no more than 8 percentage points.

FIGURE 9
Food Enjoyment, Healthy Eating and Food Choices, by Age Group



Employment Status: Those who work full time for an employer ranked highest in terms of enjoyment (90%), eating healthy (83%), as well as having many choices in types of food they ate in the past seven days (70%). Meanwhile, people who are unemployed (a distinct group from those that are out of the workforce, meaning people not actively looking for work, such as those who are retired, students or unable to work), reported the lowest proportions of enjoyment (81%), eating healthy (74%) or having many choices in the types of food they ate in the past seven days (50%).

FIGURE 10
Food Enjoyment, Healthy Eating and Food Choices, by Employment Status



Household Size: A similar pattern appears regarding food enjoyment and eating healthy foods with respondents who live alone. Solo inhabitants report a slightly lower rate for both questions (89% and 79%, respectively) than those who live with one other person (92% and 85%, respectively). Interestingly, both rates begin to decrease starting with household sizes of three people or more, reaching a low of 77% and 72%, respectively, for household sizes of eight people or more. This demonstrates that enjoyment or the accessibility to healthy meal options might be more complicated or scarce in larger households. Similarly, having many choices in the types of foods consumed drops from a high of 71% in single and two-person households to a low of 49% for household sizes of eight people or more, further supporting the notion of scarcity and limited options.

FIGURE 11
Food Enjoyment, Healthy Eating and Food Choices, by Household Size



Section 2.5 Differences Across Income Groups

Affordability is a key challenge that can affect the food people eat and the number of food choices they have. Examining the relationship of income — globally, nationally and individually — found that largely, those who were poorer were less likely to answer “yes” to the three survey questions, while richer individuals were more apt to respond positively about different aspects of the food they eat.

Using the World Bank’s country-level income categories, people living in low-income economies reported, by a large margin, the lowest rates of food enjoyment, eating healthy and having many choices in types of food. In fact, individuals in high-income economies are more than twice as likely to report having many choices in the types of food that they had than respondents in low-income economies.

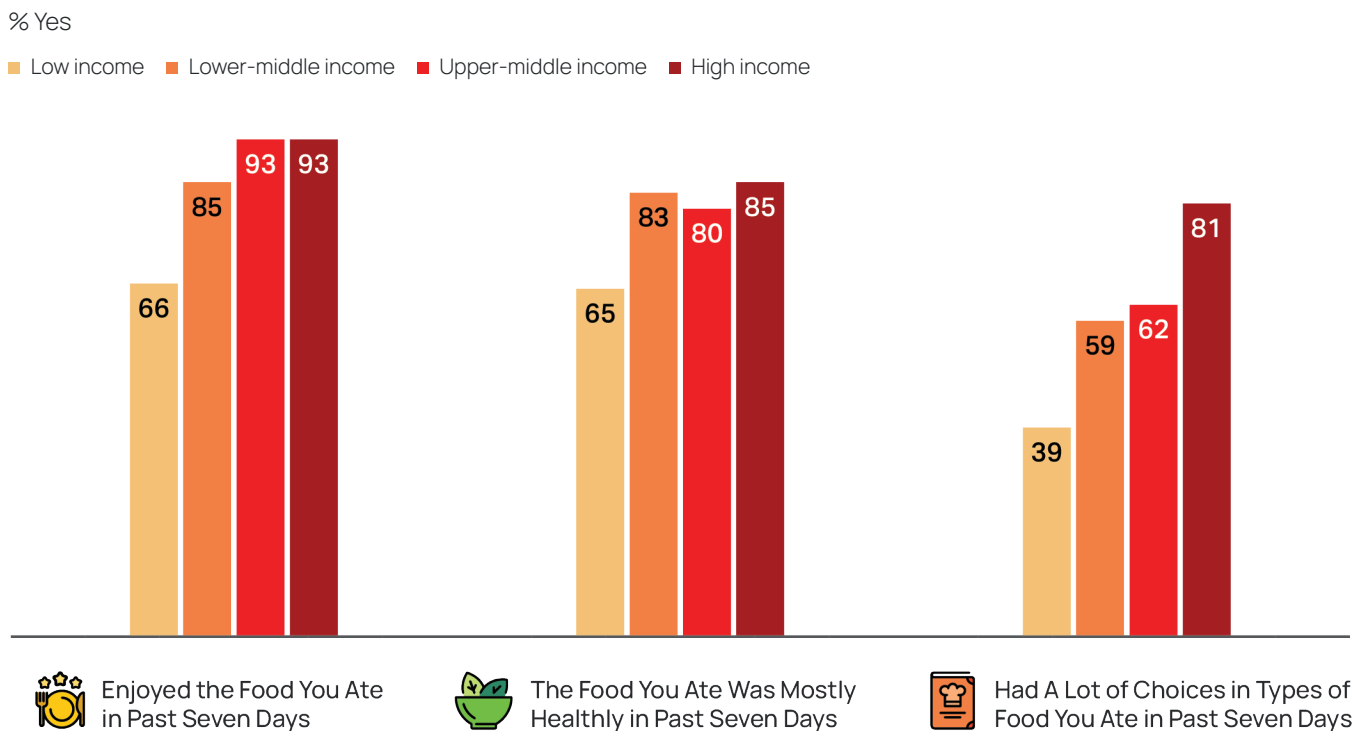
Another important pattern: people in low-income countries were less likely than those in other income groups to say their food was healthy. Responses in the three other country-level income groups were fairly similar.

Individuals living in high-income countries are more than

TWO TIMES MORE LIKELY

to report having a variety of food-related choices than those living in low-income countries.

FIGURE 12
Global Results, by Income Levels



For information about classifications, please see the World Bank Group: <https://blogs.worldbank.org/opendata/new-world-bank-group-country-classifications-income-level-fy24>. Venezuela and Northern Cyprus have no income classifications and are thus excluded from this analysis.

The Gallup World Poll measures both subjective and objective information about individuals' household income. "Subjective income" is based on how respondents answer a question about how they feel about their household income — are they "living comfortably," "getting by," or "finding it difficult or very difficult?" Conversely, "objective income" directly asks respondents to share their monthly household income; the Gallup World Poll then categorizes whether people rank in the lowest quintile, second quintile, third quintile, fourth quintile or the highest quintile of their country or area's income distribution.

As would be expected, people who reported living comfortably on their current income were much more likely to also report enjoying the food they ate (95%) than those who reported finding it difficult or very difficult to get by on their current income (80%). Notably, the gap of food enjoyment between those finding it difficult to get by and those who feel they are getting by (92%) is much greater than the gap between those who are getting by and those who are living comfortably on their income (a gap of 12 percentage points for the former comparison, as opposed to just 3 points for the latter pair). This further demonstrates the clear impact of income on food enjoyment.

Healthy eating shows a similar pattern, with 91% of those living comfortably reported eating healthy in the past seven days as opposed to 74% of those who are finding it difficult or very difficult to get by on their income. Having many choices in the types of food consumed reveals the starkest difference, with less than half (49%) of those finding it difficult or very difficult to get by felt like they had a variety of foods, while people who live comfortably boasted having a choice in foods at a figure 35 percentage points higher (84%).

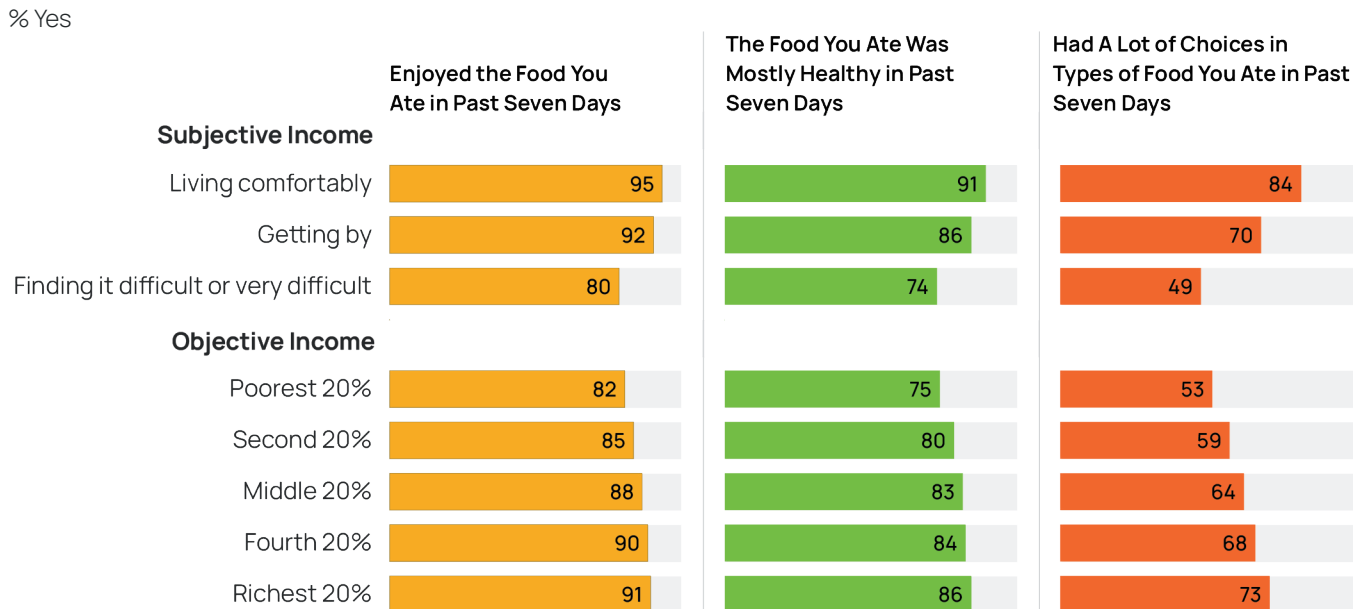
SLIGHTLY LESS THAN HALF

of people who reported finding it difficult or very difficult to get by on their present income reported having many choices in the types of food they ate in the past seven days.



Similar patterns emerge when looking at objective income. In fact, the rate of people who indicate “yes” to all three survey questions increases continuously in a linear way when moving up from one income quintile to the next. Residents in the poorest quintile reported the lowest rates of enjoyment (82%), eating healthy (75%) and having many choices in types of food (53%), whereas those in the richest quintile reported the highest rate of enjoyment (91%), eating healthy (86%) and having many choices in the types of food they eat (73%).

FIGURE 13
Subjective and Objective Income*



* Objective income refers to the recorded and standardized income which places respondents into income groups or quintiles relative to other respondents from those same countries. It is a distinct measure from subjective income, which allows respondents to self-categorize based on their subjective sentiments about their income and place themselves in one of three categories provided to them as distinct response options.

A different trend appears when looking at subjective income across regions. Noticeably, the food enjoyment gap between income groups is highest in certain regions such as in sub-Saharan Africa (a gap of 26 percentage points between the highest and lowest income categories) and Central and Western Asia (a gap of 21 percentage points).

Conversely, the regions where this subjective income gap was smallest include Latin America and the Caribbean (6 percentage points) or Northern America (6 percentage points) and Northern, Southern and Western Europe, where the gap was smallest at 4 percentage points.

A similar pattern plays out, generally speaking, with perceptions about eating mostly healthy — sub-Saharan Africa has the widest gulf between people who are “living comfortably” on their present income and those who are finding it “difficult or very difficult.” Among the former group, 87% feel like they recently ate healthy compared to 60% for the latter (a gap of 27 points). Northern, Southern and Western Europe, meanwhile, sees little difference between the two groups in terms of perceptions about eating healthy (a gap of 7 percentage points).

In terms of having a variety of choices in the types of food available for consumption, the inequality between those who are “living comfortably” and those who are “finding it difficult or very difficult,” is widest in Eastern Europe, with 47 percentage points. Notably, this area has been mired in conflict throughout much of 2022, due to Russia’s invasion of Ukraine — a military action that, beyond its human cost, has disrupted the food supply for many countries in this region and beyond.²³ These results suggest that this burden has been felt particularly hard by those with limited means.



IN JAPAN, THREE IN 10

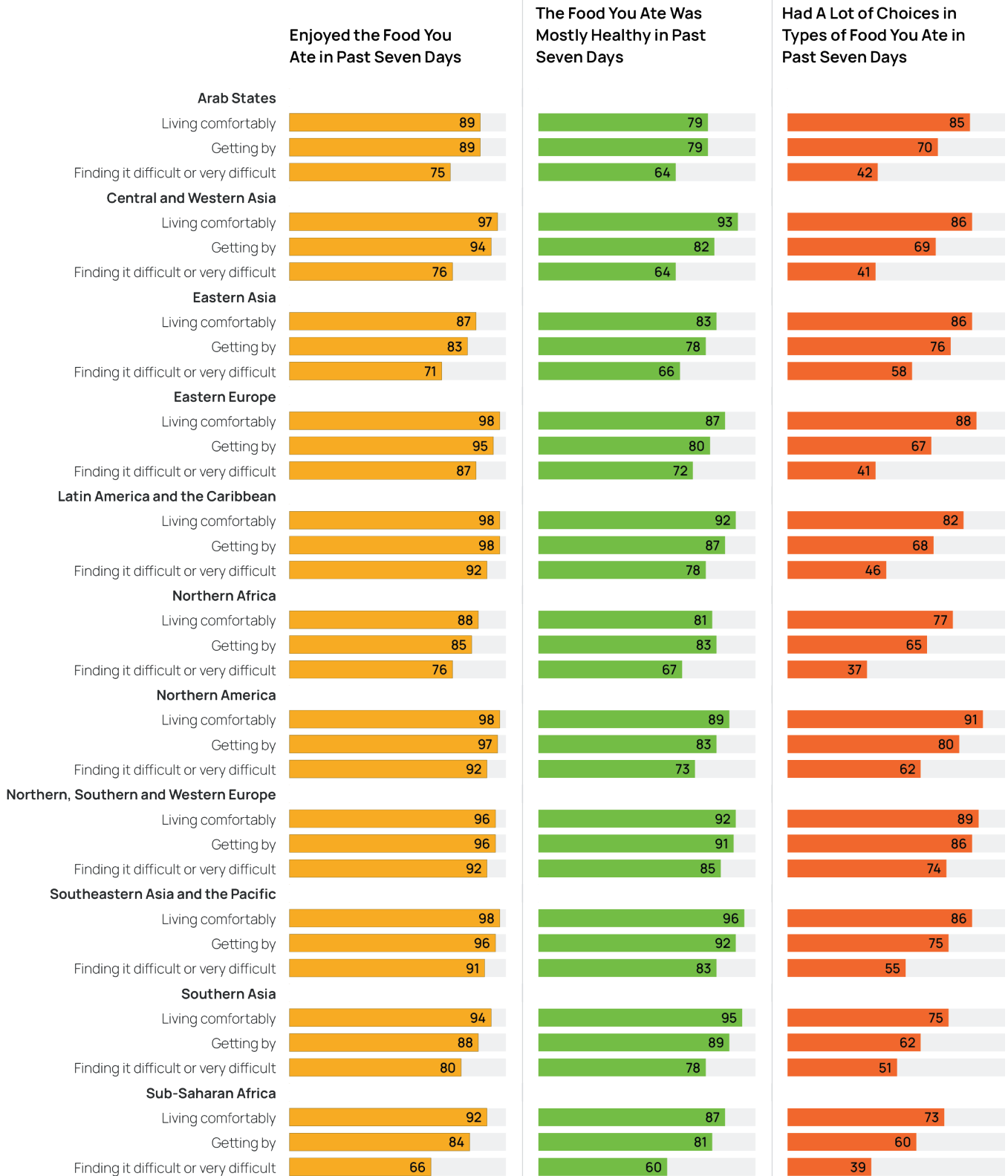
residents finding it difficult or very difficult to get by on their present income reported not enjoying the food they had, not eating healthy and not having many choices in the types of food that they had in the past seven days.



²³ Caprile, A. (2022). *Russia's war on Ukraine: Impact on food security and EU response*. European Parliamentary Research Service. [https://www.europarl.europa.eu/RegData/etudes/ATAG/2022/729367/EPRS_ATA\(2022\)729367_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2022/729367/EPRS_ATA(2022)729367_EN.pdf)

FIGURE 14
Subjective Income by Regions

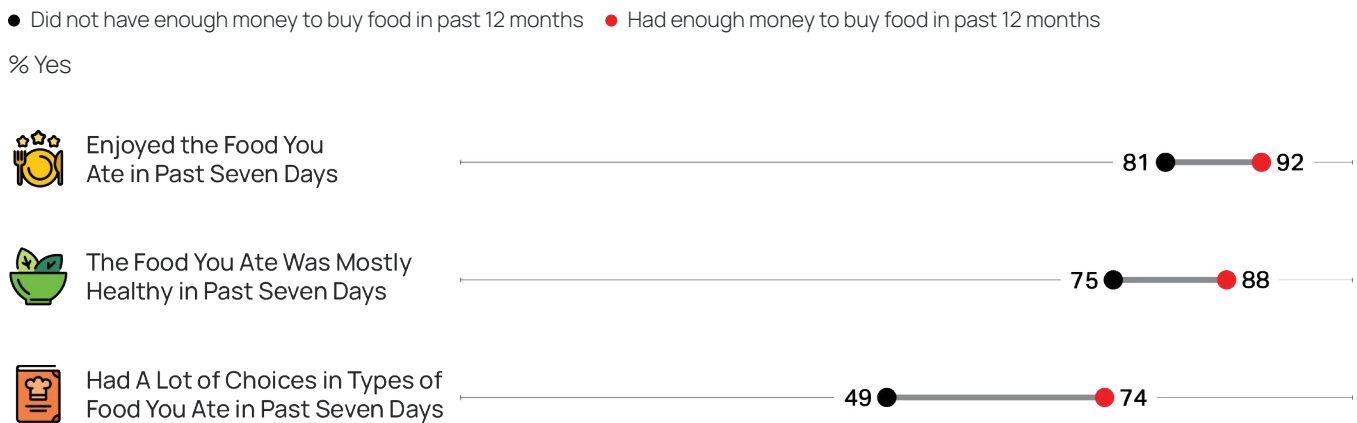
% Yes



The Gallup World Poll also asks respondents if there has been any time in the past 12 months where they did not have enough money to buy food that they or their family needed. Globally, people who said they struggled at some point in the last year to afford food were significantly less likely to say they enjoyed the food they ate in the last seven days than those who said they had not had such an experience (81% vs 92%, for a gap of 11 percentage points). A similar rift was on display for perceptions about eating healthy — people who struggled to afford food in the past year are 13 percentage points less likely than those who have not struggled in any way to say the food they ate was healthy.

A larger gap still, at 25 points, separates these two groups on whether they have a lot of choices in the types of food they eat. Slightly fewer than half (49%) of people who said they could not afford food at least once in the past year felt they had a bounty of choices with respect to the types of food available; this figure skyrockets to 74% among those who have not encountered such difficulties in the past year.

FIGURE 15
Food Affordability





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CHAPTER 3

Subjective Wellbeing and Food Enjoyment, Health and Choice

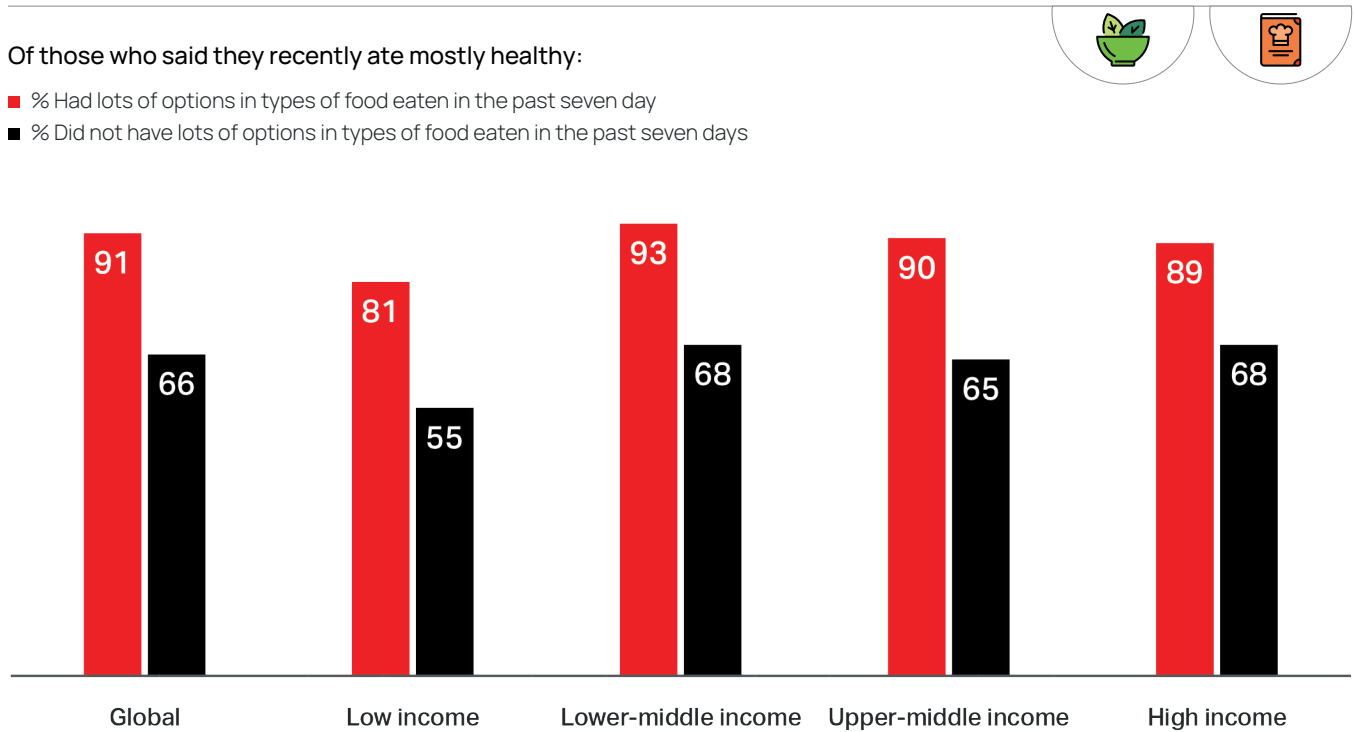
Section 3.1 How Do Perceptions of Choice and Health Influence Overall Food Enjoyment?

In the 2022 *State of Food Security and Nutrition in the World* report,²⁴ the FAO, UNICEF, International Fund for Agricultural Development (IFAD), World Food Programme (WFP) and World Health Organization (WHO) noted the importance of having access to many options in the types of food one consumes in order to have a healthy diet. In fact, the report states that “dietary diversity, or the variety of food from different food groups that make up the diet” is a fundamental component of a healthy diet.

Based on this understanding set forth by health and nutrition professionals around the world, Gallup and the Ando Foundation/Nissin Food Products asked the world about their access to many choices in the types of food they’ve consumed in the past seven days and employed this question as a proxy measure of “diet diversity” to further examine the links between food choices and a healthy diet. The data suggest that eating a diverse diet is not necessarily seen by many respondents as eating healthy. If anything, it supports existing research that has found that other subjective components of respondents’ lives — such as their socio-economic status and country-level income levels or other personal, social and cultural elements — play an important role in people’s perceptions of a healthy and diverse diet.²⁵

24 FAO, IFAD, UNICEF, WFP and WHO. (2022). *The state of food security and nutrition in the world 2022. Repurposing food and agricultural policies to make healthy diets more affordable*. Rome, FAO. <https://doi.org/10.4060/cc0639en>
25 Boustani, N. M., & Guiné, R. P. F. (2020). Food choice motivations and perception of a healthy diet in a developing Mediterranean country. *Open Agriculture*, 5(1), 485–495. <https://doi.org/10.1515/opag-2020-0048>

FIGURE 16
Eating Healthy and Having Choices in Types of Food



All differences are statistically significant.

When looking at the individual and country levels, there seems to be a lack of alignment between eating healthy and having many choices in the types of food consumed. Specifically, while those who say they have lots of choices in what they eat are more likely to say they ate mostly healthy, many who lack choice also say they ate healthy.

Globally, people who say they had lots of choices in the food they ate were substantially more likely than those who said they did not have choices to believe they ate “mostly healthy” in the past seven days (91% vs. 66%). This gap remained relatively consistent across country income groups, though people in low-income countries were generally less likely to say they ate “mostly healthy” than people elsewhere.

Still, it must be noted that majorities of people globally and across income groups said they ate “mostly healthy,” in the past seven days, despite saying they lacked choices in the types of foods they ate — **suggesting that to many people, eating healthy is not necessarily the same as eating a diverse diet.**

Similarly, there is further evidence at the country level that perceptions of eating healthy is not perfectly aligned with having lots of choices in the types of food one eats. In fact, in 119 of the 142 countries surveyed, the percentage of people who said they ate “mostly healthy” was at least 5 percentage points higher than the percentage who said they had lots of choices in the types of foods they ate. Countries where the difference between the two questions is largest (meaning substantially more people said they ate “mostly healthy” than said they had lots of options) also tend to be places where food insecurity is an issue, as measured by the FAO.

While the data do not confirm that having many choices in the types of food consumed and eating healthy are as closely linked as hypothesized, the research does suggest that eating healthy contributes highly to overall food enjoyment.

Overall, 94% of respondents who said they ate “mostly healthy” also enjoyed the food they ate — well above the 57% among those who said they did not eat “mostly healthy.”

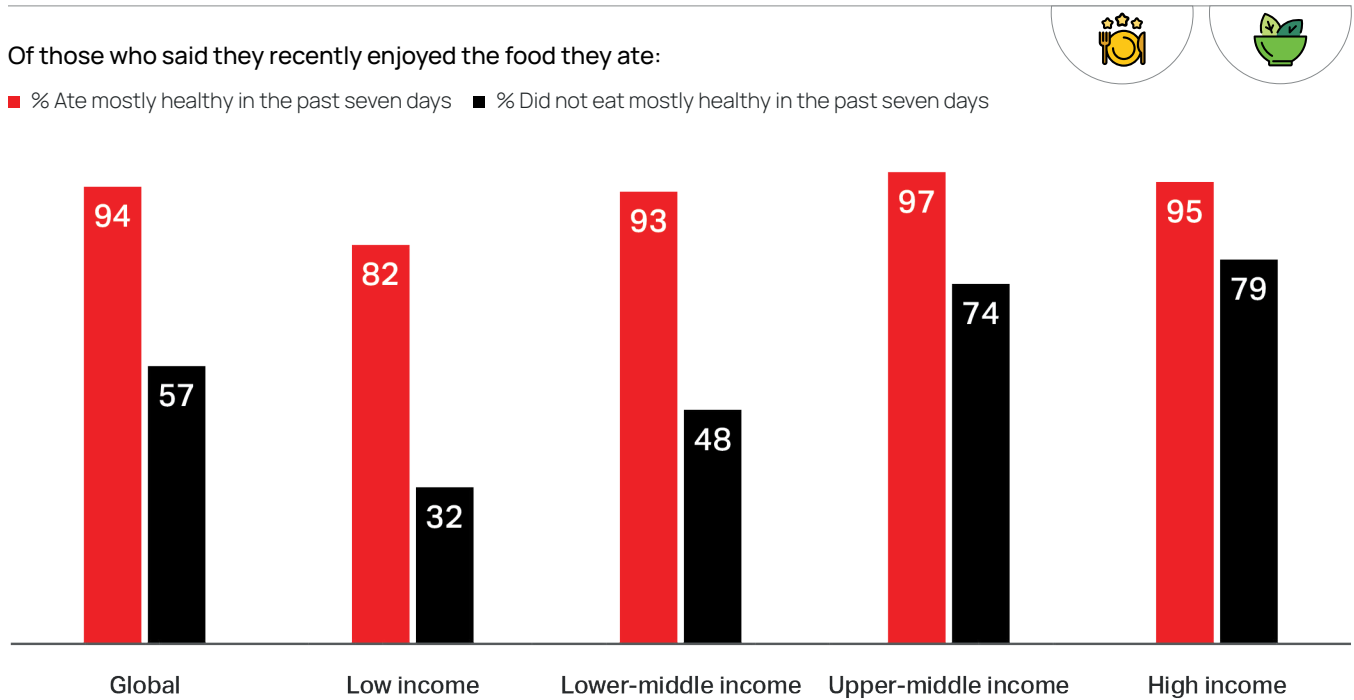


While most people — and, in the aggregate countries — were more likely to consider the food they recently ate as healthy compared to feeling like they had lots of food options, this was not the case in Japan. In that country, people are

3 PERCENTAGE POINTS MORE LIKELY

to say they have lots of options in the types of food they eat than say they ate “mostly healthy.”

FIGURE 17
Eating Healthy and Food Enjoyment

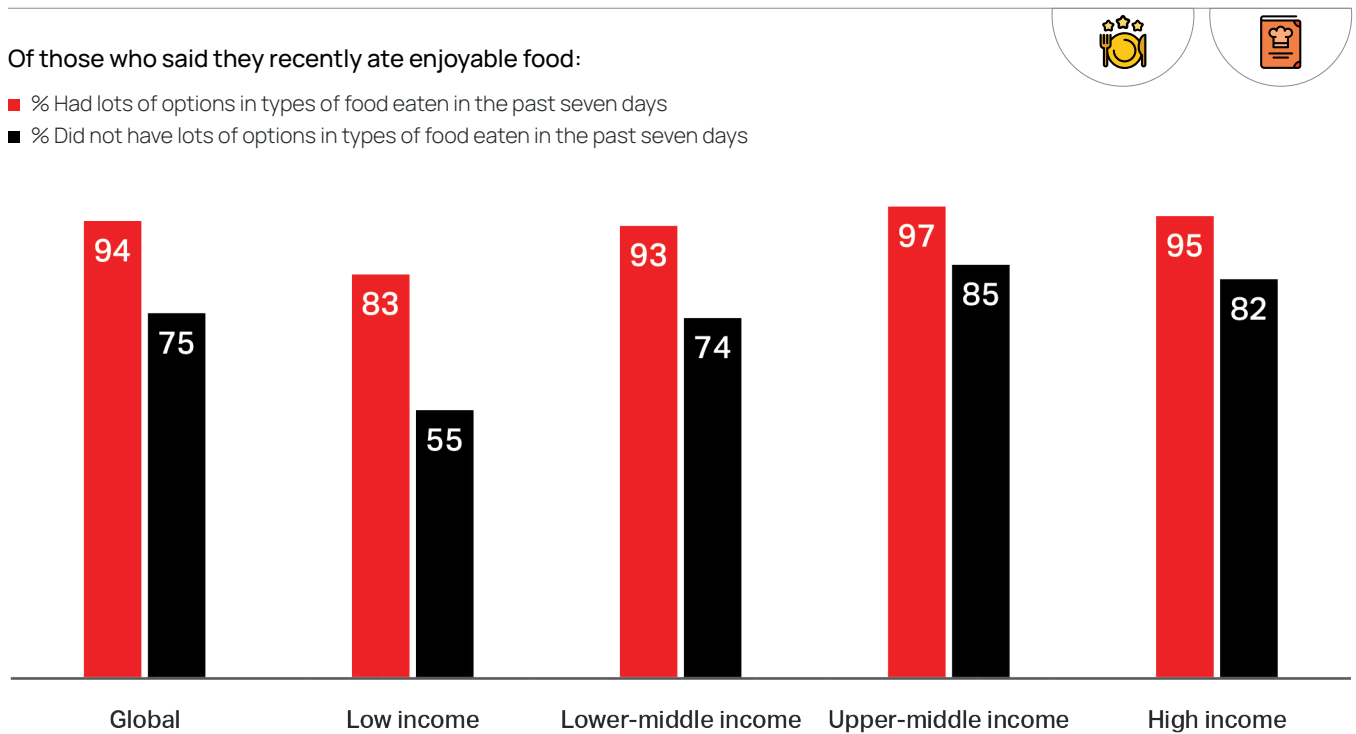


All differences are statistically significant.

On the other hand, when examining opinions about having lots of food options, we do not see as nearly a sharp contrast in food enjoyment: 94% who said they have lots of options in the types of food they ate also said they enjoyed the food they ate, while 75% who said they did not have lots of options also said this (a drop of 19 percentage points, compared to 37 points when compared with perceptions of eating healthy).

Overall, food enjoyment, perceptions of eating healthy, and having lots of choices in the types of food consumed were deeply intertwined. In fact, 55% of all respondents worldwide answered “yes” to all three questions while just 6% answered “no” to all three questions. Notably, in low-income countries, the rate of respondents indicating “no” to all three questions rises to 18%.

FIGURE 18
Food Enjoyment and Having Many Options in Types of Foods



All differences are statistically significant.

Section 3.2 How Food Enjoyment, Healthy Eating and Having Choices in What You Eat Contribute to Overall Wellbeing

Subjective wellbeing,²⁶ or measuring in a meaningful way how people feel about their lives, is an important measure for policymakers and researchers to consider. Evidence suggests that unhappiness is rising at rapid rates around the world and that many societies are facing a “wellbeing inequality”²⁷ crisis, an alarming reality.

Extensive research has explored the myriad factors intertwined with individual happiness, unveiling a complex web of interrelationships.²⁸ Beyond economic circumstances, studies have examined the role of trust, social capital and other dimensions that shape subjective wellbeing. A clear conclusion from this research is that happiness is not solely determined by material prosperity, and, indeed, affluence can carry “its own sets of afflictions and addictions.”²⁹

Curiously, amid this expansive research, one aspect has remained relatively unexplored: the relationship between people’s eating habits and subjective wellbeing. While nutrition and healthy eating are widely understood as playing an integral role in one’s physical health, there is a dearth of reliable, cross-cultural research investigating whether consuming enjoyable, healthy food as well as having a variety of choices contribute to people’s subjective wellbeing.

This section steps into this breach, offering one of the first in-depth analyses that uncovers a strong connection between eating habits and subjective wellbeing — suggesting that eating well is a pathway to living well.



ABOUT

SUBJECTIVE WELLBEING, OR

26 This term is often used interchangeably with “happiness,” most notably in the annual World Happiness Report. The World Happiness Report is a publication of the Sustainable Development Solutions Network, powered by the Gallup World Poll data. See more here: <https://worldhappiness.report/about/>.

27 Clifton, J. (2022). *Blind spot: The global rise of unhappiness and how leaders missed it*. Gallup Press. <https://www.gallup.com/analytics/394670/blindspot.aspx>

28 See, for instance, the World Happiness Report from 2012 to 2023.

29 Sachs, J. (2012). *World happiness report* (J. Helliwell & R. Layard, Eds.). https://s3.amazonaws.com/happiness-report/2012/World_Happiness_Report_2012.pdf

Section 3.2.1: Measuring Subjective Wellbeing

The Gallup World Poll features a number of questions which measure some aspect of wellbeing; these questions, in turn, are grouped into a Life Evaluation Index which reflects a broad view of the wellbeing concept.³⁰ We rely on this index in assessing the relationship between eating enjoyment, healthy eating and having choices in what one consumes, in regards to an individual's subjective wellbeing.

Index questions:

Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you.

On which step of the ladder would you say you personally feel you stand **at this time**?

Just your best guess, on which step do you think you will stand in the future, say about **five years from now**?

The **Life Evaluation Index**, like other measures of wellbeing, has been shown to be positively associated with an individual's income, education levels and health status — a finding which holds across countries.³¹ At the country level, the Life Evaluation Index correlates strongly with “traditional” measures of a prosperous society, such as GDP per capita and various public health indicators.

THEIR LIVES, IS AN IMPORTANT MEASURE FOR POLICYMAKERS AND RESEARCHERS TO CONSIDER

³⁰ This index measures respondents' perceptions of where they stand now and in the future. Building on the earlier work by Hadley Cantril and the Cantril Self-Anchoring Striving Scale, Gallup measures life satisfaction by asking respondents to place the status of their lives on a “ladder” scale with steps numbered from 0 to 10, where 0 indicates the worst possible life and 10 the best possible life. Individuals who rate their current lives a “7” or higher and their future an “8” or higher are considered “thriving.” Individuals are “suffering” if they report their current and future lives as a “4” or lower. All other individuals in between are “struggling.”

³¹ Gallup. (2022). *Worldwide research methodology and codebook*. Gallup.

Section 3.2.2: A Taste of Happiness? Exploring How Enjoyment, Healthy Eating and Food Choices Contribute to Subjective Wellbeing

Are people who say they mostly enjoyed the food they ate in the past seven days, considered it mostly healthy and felt like they had lots of choices more likely to be thriving in their life evaluations than those who did not say yes?³²

Globally, people who say they mostly enjoyed the food they ate in the past seven days or felt like they had lots of choices in the types of foods they ate were 16 percentage points more likely to be thriving in their Life Evaluation Index than people who reported otherwise. The difference for perceptions of eating mostly healthy was slightly smaller, but still significant (statistically or otherwise), at 10 percentage points.

TABLE 2

Thriving in Life Evaluation Index by Food Enjoyment, Perceptions of Eating Mostly Healthy and Having Lots of Choices in Types of Food Eaten, Global Results

Thinking about the past 7 days...	Yes (% Thriving)	Not yes* (% Thriving)	Difference (pct pts)
Would you say you mostly enjoyed the food you ate, or not?	29	13	16
Do you think the food you ate was mostly healthy, or not?	29	19	10
Did you feel you had a lot of choices in the types of food you ate each day, or not?	33	17	16

*This includes people who said "Do not know" or did not answer the question, as well as people who said "No."

While intriguing, these results do not confirm the hypothesis that there is a link between eating perceptions and thriving. The likelihood to be thriving in one's life evaluation is known to vary according to an individual's background or characteristics — education, employment status, age and geography are just a few of the factors which influence this. To overcome what may be a statistical illusion, it is necessary to somehow try and account for these factors in our analysis.

Of course, this means what was a relatively simple comparison must now encompass a multitude of new variables — a task difficult to achieve without the assistance of advanced statistical techniques — specifically, regression analysis. A familiar tool in the statistical toolbox, regression allows us to measure the individual effects of each survey question on the likelihood of thriving. Moreover, this technique accounts for other influential or confounding variables that, if overlooked, could undermine the validity of the ultimate findings.

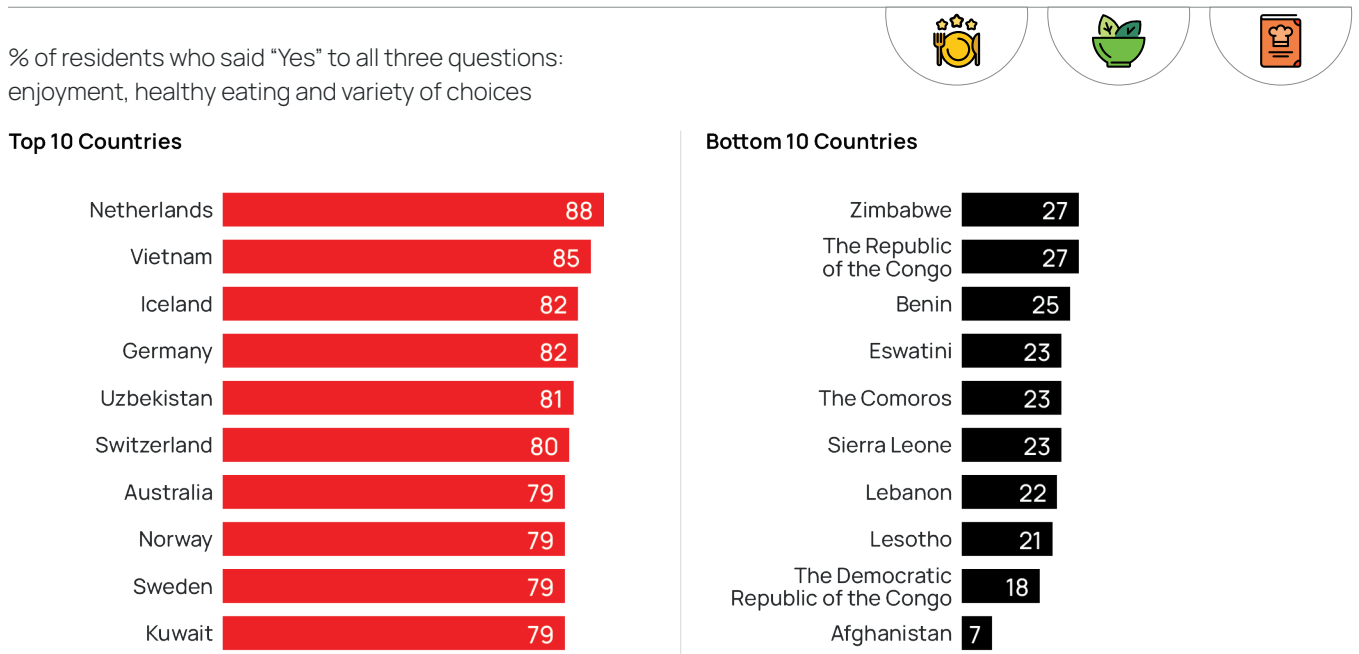
³² This includes people who said "Do not know" or did not answer the question, as well as people who said "No."

As has been shown elsewhere in this report, there is a clear relationship between the three survey questions of focus, even if it is not a perfect one. In other words, people who say that they feel like they have a lot of choices in the types of food they eat are very likely to also say they think their food is healthy and that they find it enjoyable. However this is more than just a statistical fact. It is an indicator that these aspects of a person’s eating habits — enjoyment, perceived health and variety — are intertwined. Together, they make for a complete and satisfying eating experience.

With this perspective in mind, Gallup decided that, rather than including all three survey questions as individual predictors of subjective wellbeing in the regression analysis, a composite index should be used.³³

This new variable — known as the “Food Wellbeing Index” — captures the proportion of people who have said “yes” to all three questions: food enjoyment, healthy eating and variety of food choices. For those who said yes to all three questions, we refer to them in this report as “completely satisfied.” When examining country-level scores on the index, the Netherlands (88%), Vietnam (85%), Iceland and Germany (both 82%) appeared at the top of the list while Afghanistan (7%), The Democratic Republic of the Congo (18%) and Lesotho (21%) dominated the other end of the ranking (see Appendix material for a complete distribution of scores for all countries on the Food Wellbeing Index). These significant disparities across countries highlight the importance of accounting for those variations in the forthcoming statistical analysis.

FIGURE 19
Top and Bottom Countries on the Food Wellbeing Index



³³ As is discussed further below, Gallup performed a separate regression analysis which included each of the three survey questions as individual predictors, in order to better understand the unique contribution of each question to predict higher wellbeing compared to the Food Wellbeing Index.

The Food Wellbeing Index will be included in the larger regression which will attempt to explain or “predict” people’s overall wellbeing. Critically, the statistical model will account for a variety of individual characteristics which will allow for a straightforward comparison regarding the relationship of being “completely satisfied” in one’s eating experiences and subjective wellbeing. Put another way, the goal is to see how individuals who otherwise share various demographic characteristics such as their gender, age, education, etc., but differ in terms of how they fared on the Food Wellbeing Index, consistently rate their subjective wellbeing differently.

Demographic attributes included in this analysis are as follows:

- Gender
- Age of respondent (single year increments)
- Household income quintile: Based on respondent’s total household income. Respondents are then placed into quintiles based on their country’s income distribution.
- Urbanicity: This is based on how a respondent describes his or her area. Those who describe their area as a “rural area or a farm” or “a small town or village” are considered, for the purposes of this analysis, as “rural.” Those who said they live in a “large city” or a suburb of a city are considered “urban.”
- Highest level of educational attainment³⁴
- Marital status (married or in a domestic partnership, or not)
- Employment (working full time for an employer or not)
- Country of residence

Additionally, the model utilizes several World Poll questions which previous research — notably the World Happiness Report — have shown to be significant in predicting subjective wellbeing,³⁵ including:

- **Freedom to choose what to do in life:** The analysis will compare respondents who said satisfied, versus those who did not say satisfied, in terms of predicting which group is more likely to be thriving in their life evaluation.
- **Learn or do something interesting yesterday:** This is one question of the Gallup World Poll’s larger Positive Experience Index. Respondents who said yes are compared against those who did not say yes.
- **Donated money to charity:** Respondents who said yes, they donated to a charity in a month, will be compared against those who did not say yes.

³⁴ While countries have unique ways of classifying education levels, the Gallup World Poll has created a harmonized education measure which facilitates comparisons across countries by educational attainment. Respondents are coded by their highest level of education: primary (up to eight years of basic education or less); secondary (nine to 15 years of education) and tertiary (university or college-level education).

³⁵ Because of differences in the level of analysis and the nature of the dependent variable, not all World Poll variables identified by the World Happiness Report are utilized here (e.g., the World Happiness Report models the average happiness score of a country, using a three-year rolling average whereas this analysis is predicting if a person is thriving or not). Additionally, the World Happiness Report uses some questions which were not asked alongside the Ando/Nissin survey module (at least not in all countries), and so these items had to be excluded to preserve, as best as possible, the overall pooled sample of respondents used in the analysis.

The analysis also accounts for the global region of the resident, which can help account for the effect of culture or geography on individual life evaluations. Lastly, the GDP per capita³⁶ was included to account for the economic development of a given country or area. While our preliminary analysis might have considered a host of additional metrics, only those that were found to be statistically significant predictors of wellbeing have been included in the final analysis.

Lastly, the specific type of analysis used was a logistic regression model, which is commonly used to explain binary outcomes such as whether an individual is thriving or not. The analysis was conducted on the pooled (combined) dataset and accounted for the complex survey design. Population-adjusted survey weights were applied in the analysis, meaning respondents from more populous countries were given greater representation in shaping the final results.



³⁶ GDP per capita measured in current international dollars converted by purchasing power parity (PPP). Data were obtained using the World Bank API. Data are for 2022 or the most recent year available. GDP per capita data were log transformed.

Section 3.2.3: Unveiling a New Path to Wellbeing: Insights From the Ando Foundation/Nissin Food Products Global Study

The Ando Foundation/Nissin Food Products Global Study on Satisfaction With Food Enjoyment and Variety and Subjective Wellbeing finds a compelling, statistically significant relationship between being completely satisfied on the Food Wellbeing Index (i.e. people who said they mostly enjoyed the food they ate, thought it was mostly healthy and felt they had lots of choices) and thriving in one's life evaluation. Put simply: People who are completely satisfied are 1.62 times more likely than those who are not completely satisfied to have higher subjective wellbeing (also known as thriving) — even after controlling for many of the main characteristics or attitudes which might help explain why people rate their lives differently, such as their country of residence, gender, income, age and education, among other factors.

The Food Wellbeing Index — a measure of whether people believe they are mostly consuming enjoyable, healthy food and that they have a lot of choices in the types of food they eat — has the single greatest effect on subjective wellbeing compared to the other key attitudes or demographic characteristics measured on the survey, including people's generosity (donating to charity), freedom to make their own decisions in life and to continue to learn or do something interesting.

To be clear, it's not that these other characteristics do not matter in terms of predicting if a person will have higher subjective wellbeing — most do, including educational attainment, GDP per capita and global subregion.

However, feeling that one has access to a "complete meal," — enjoyable, healthy and diverse types of food — matters too. In fact, the Food Wellbeing Index is the single best predictor of higher subjective wellbeing compared to the other key survey questions included in the analysis — such as whether a person has donated to charity in the past month or if a person said they learned something interesting yesterday, if looking only at the effect sizes produced from the analysis (see table in [A.1 of the appendix](#)).³⁷

It is important to note that each of these three survey questions were also found, in a separate analysis, to be statistically significant predictors of higher wellbeing in their own right. This additional regression, which served as a form of robustness test to the main analysis, included all of the same demographic control variables but did not include the Food Wellbeing Index.

³⁷ "Effect size," or the regression coefficient in this case, refers to exponentiated regression coefficient, better known as the "odds ratio." This figure provides as an estimate of how much more (or less) likely respondents who match certain characteristics (such as being completely satisfied on the Food Wellbeing Index) are to attain the outcome of interest (in this case, be considered thriving in their life evaluations) than those not matching those characteristics, all else being equal. Odds ratios which are larger than 1 indicate people who have the specified characteristic (be it a demographic subgroup or a response on attitudinal survey question) are more likely to be thriving than some reference category, while a number below 1 indicates a lower likelihood compared to a reference category.

Instead, each of the three survey questions — including whether an individual said they generally enjoyed the food they recently ate, thought it was mostly healthy and whether they believed they had lots of choices in the types of food they ate — included individual predictor variables. This analysis found that all three of the questions had a statistically significant relationship with higher wellbeing, even after controlling for all other factors.

Specifically, this model found that:

Individuals who said they had lots of choices in the types of food they ate were

**1.45 TIMES
MORE LIKELY**

to have higher wellbeing than those who did not say this.

People who enjoyed their food were

**1.29 TIMES
MORE LIKELY**

to be thriving, compared to others who did not mostly enjoy the food they ate.

Beliefs about eating mostly healthy also was predictive of higher wellbeing — individuals who said this were

**1.15 TIMES
MORE LIKELY**

to be thriving than those who did not express this opinion.

These results help illustrate why the Food Wellbeing Index proved to have such a powerful relationship with wellbeing in the main analysis.

This novel research demonstrates that individuals who report higher levels of satisfaction with their food experiences, prioritize healthy eating and have access to a diverse range of food options are more likely to experience a heightened sense of wellbeing.

Importantly, these findings remain robust even when accounting for various other characteristics and factors known to influence overall wellbeing. It appears there may be a new recipe when it comes to the factors that contribute to a thriving and fulfilling life.

Special Focus: The Significance and Efficiency of the Food Wellbeing Index

The Food Wellbeing Index is constructed using the following questions:

- 1) Would you say you mostly enjoyed the food you ate, or not?
- 2) Do you think the food you ate was mostly healthy, or not?
- 3) Did you feel you had a lot of choices in the types of food you ate each day, or not?

Individuals who answer affirmatively to all three questions are deemed “completely satisfied” on the Food Wellbeing Index, indicating an optimal balance of food enjoyment, perceived healthiness and variety in their diet.

While the mechanics of the Food Wellbeing Index are relatively straightforward, there is a larger question to consider: Why is this combination of survey items a compelling indicator of an individual's wellness in relation to food? There are several reasons to consider why this is a comprehensive and robust measure, based on the wealth of information the Food Wellbeing Index collects:

- **Emotional Satisfaction:** The first question, “Would you say you mostly enjoyed the food you ate, or not?” captures the emotional satisfaction derived from food. Enjoyment is an intrinsic part of overall wellbeing. A positive emotional response to food can influence mood, reduce stress and increase general life satisfaction.
- **Health Perceptions:** The second question, “Do you think the food you ate was mostly healthy, or not?” gauges an individual's perception of their food's healthiness. Perception of healthiness can influence behavior, dietary choices and the motivation to maintain a balanced diet. It's also a reflection of an individual's awareness and education about what constitutes a healthy meal.
- **Variety and Choice:** The third question, “Did you feel you had a lot of choices in the types of food you ate each day, or not?” assesses the sense of autonomy and variety in one's diet. Having choices implies access to a diverse array of foods, which is vital for nutritional completeness. Additionally, the freedom to choose signifies a degree of control over one's environment, a factor closely linked to psychological wellbeing.
- **Simplicity and Clarity:** The questions are phrased plainly, making them accessible and easy to understand for a wide range of respondents. This ensures that responses are more likely to be accurate reflections of the individual's experiences and feelings.
- **Getting the Whole Picture:** Each question is valuable on its own, yet covers all the important elements that food can relate to wellbeing. Therefore, the combination provides a comprehensive understanding of an individual's relationship with food. For instance, someone might enjoy unhealthy foods, which could lead to long-term health issues. Conversely, someone might have access to a variety of foods but might not find them enjoyable or perceive them as healthy. By evaluating all three factors together, the index offers a nuanced view of food-related wellbeing.

This is why the Food Wellbeing Index is an effective measure. Indeed, the effectiveness of the measure was demonstrated in the above analysis, where it was shown that the Food Wellbeing Index has a strong relationship with subjective wellbeing, even when controlling for a number of important and salient characteristics.

At the same time, it is important to be mindful that this is the first year of the Ando Foundation/Nissin Food Products Satisfaction With Food Enjoyment and Variety Survey Module. The module is being fielded again in 2023, providing a fresh wave of data which can be used to further evaluate the effectiveness of this new measure.

Section 3.3 Nutrition and Happiness: Exploring the Relationship Through Cross-Country Data

A 2017 research paper found that people who consume foods widely accepted as “healthy,” such as fruits and vegetables, experienced a boost of their “in the moment” happiness.³⁸ This allowed the researchers to conclude that “healthy food choices are happy food choices.”

This is an intriguing finding, though not a generalizable one, given the study was conducted only in Germany. While this report has been primarily focusing on the relationship between people’s perceptions of key aspects of their eating habits and subjective wellbeing (or, in the parlance of the Germany research paper, “happiness”), another question worth considering is what role eating a nutritious, healthy diet plays in one’s overall sense of wellbeing.

The Ando Foundation/Nissin Food Products survey module did not ask respondents about specific types of food they consumed, as this was beyond the scope of the research objectives.

Generally, collecting comprehensive dietary intake information has historically been a difficult, expensive task which can often yield unreliable data, as respondents are likely to misremember certain details of the meals they recently ate, particularly when asked about things such as portion sizes.³⁹ As a result, most countries lack current and comparable data on what people eat.⁴⁰

The Global Diet Quality Project sought to bridge this data gap by developing a questionnaire known as the Dietary Quality Questionnaire (DQQ), which measures “well-established aspects of data quality” in a manner that does not impose a high cognitive burden on the respondent. Notably, the DQQ establishes several core diet quality indicators, such as the “All-5,” which reports the percentage of people in a country who consumed all five foods generally recommended for daily consumption, including fruits; vegetables; pulses, nuts or seeds; animal-source foods; and starchy staples. Another indicator flowing from the DQQ is the “NCD-Protect,” which assesses to what degree an individual is including food groups which are protective against non-communicable diseases (NCD).

38 Wahl, D. R., Villinger, K., König, L. M., Ziesemer, K., Schupp, H. T., & Renner, B. (2017). Healthy food choices are happy food choices: Evidence from a real life sample using smartphone based assessments. *Scientific Reports*, 7(1). <https://doi.org/10.1038/s41598-017-17262-9>

39 Amoutzopoulos, B., Steer, T., Roberts, C., Cade, J. E., Boushey, C. J., Collins, C. E., Trolle, E., De Boer, E., Ziauddeen, N., Van Rossum, C., Buurma, E., Coyle, D., & Page, P. (2018). Traditional methods v. new technologies – dilemmas for dietary assessment in large-scale nutrition surveys and studies: a report following an international panel discussion at the 9th International Conference on Diet and Activity Methods (ICDAM9), Brisbane, 3 September 2015. *Journal of Nutritional Science*, 7. <https://doi.org/10.1017/jns.2018.4>

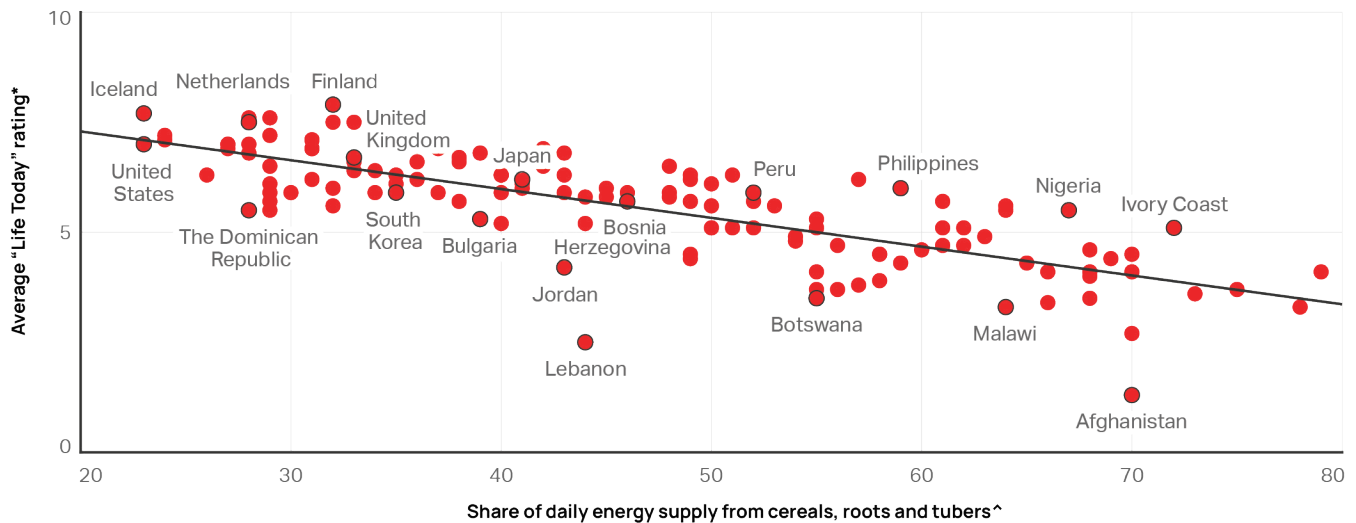
40 Herforth, A., & Beal, T. (2022, October 19). *Global Diet Quality Project measures what the world eats*. Gallup.com. <https://news.gallup.com/opinion/gallup/403376/global-diet-quality-project-measures-world-eats.aspx>

In 2021, the DQQ was included on the Gallup World Poll in 41 countries. The data from that undertaking, as well as the accompanying analytical report *Measuring What the World Eats* are now available on the website of the Global Diet Quality Project.

The relationship of diet quality to people’s happiness is a topic explored in the DQQ report. Their analysis found that, in most countries, individuals “consuming more diverse diets, more food groups recommended in global dietary guidelines, and more foods that are protective against NCDs experience higher current wellbeing,” even when taking into account a person’s age, education level and income.⁴¹

As has been noted, the Food and Agriculture Organization dietary diversity score is a critical component to maintaining a healthy, nutritious diet⁴² — a perspective that is well captured by the DQQ’s “All-5” indicator. Indeed, dietary diversity may not only be essential to eating healthy, but also to living well — as measured by one’s subjective wellbeing. The horizontal axis of the chart below shows what percentage of a person’s total daily energy supply comes from one food group (cereals, roots and tubers⁴³) for a given country. A higher percentage indicates that the country, taken as a whole, enjoys a less diverse diet.⁴⁴ The vertical axis shows the country’s average score of the World Poll’s question asking individuals to rate their lives on a 0-10 scale. There is a clear negative relationship — as a country’s diet gets less diverse, the less happy that society is overall.

FIGURE 20
Dietary Diversity and Happiness



^A high share of energy from cereals, roots and tubers typically represents lower dietary diversity.

*The “Life Today” rating is measured on a 0-10 scale, where 0 equals the worst possible life and 10 equals the best possible life.

41 Global Diet Quality Project. (2022). *Measuring what the world eats: Insights from a new approach*. Geneva: Global Alliance for Improved Nutrition (GAIN); Boston, MA: Harvard T.H. Chan School of Public Health, Department of Global Health and Population. <https://doi.org/10.36072/dqq2022>

42 FAO, IFAD, UNICEF, WFP and WHO. (2022). *The state of food security and nutrition in the world 2022. Repurposing food and agricultural policies to make healthy diets more affordable*. Rome, FAO. <https://doi.org/10.4060/cc0639en>

43 From the FAO: “Official description: The indicator expresses the energy supply (in kcal/caput/day) provided by cereals, roots and tubers as a percentage of the total Dietary Energy Supply (DES) (in kcal/caput/day) calculated from the corresponding countries in the FAOSTAT food balance sheets.”

44 Ritchie, H., Rosado, P., & Roser, M. (2023). *Diet compositions*. Published online at OurWorldInData.org. Retrieved from: <https://ourworldindata.org/diet-compositions>



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CHAPTER 4

Conclusion

The groundbreaking Ando Foundation/Nissin Food Products Satisfaction With Food Enjoyment and Variety Survey Module offers a unique opportunity to gain a comprehensive and comparable understanding of people’s food experiences and enjoyment worldwide. These valuable data have revealed fascinating insights into how individuals feel about their food. Across nearly all countries, the majority of people report “mostly enjoying” the food they eat, which is a heartening global trend. Additionally, a significant number of individuals believe that the food they consume is mostly healthy, though this perception is slightly less prevalent compared to the widespread feeling of food enjoyment. These findings highlight the universal delight people take in their meals and that most people believe they are eating healthy.

Granted, people may have an idea of what constitutes eating healthy that differs from the dietary guidelines issued by national governments or international organizations such as the FAO, though there is no way to determine that from this survey data alone — but this result nonetheless suggests that most people do *strive* to eat healthy. If they are misguided as to what that means, then public health experts and policymakers concerned with this issue may need to consider new ways of communicating this information to the general public.

Less common, though, is the feeling of having a variety of choices in the types of food one consumes. Particularly, individuals of lower socioeconomic status and those residing in lower income countries tend to perceive limited options in terms of the types of food available to them.

Such a deficiency in dietary diversity carries multiple implications. At the forefront, a broad spectrum of food is championed by many public health experts as the cornerstone of a nutritious intake. A diversified diet ensures the acquisition of all vital nutrients, essential for maintaining optimal health. Moreover, a restricted choice in food often signals deeper concerns related to food security or availability. In scenarios where choices are limited, the broader ramifications on health — due to lack of access to essential foods — can be considerable.

Further exploration into the survey's outcomes reveals a profound link between food choices and subjective wellbeing. The Food Wellbeing Index, with its three foundational pillars, accentuates a vital aspect of personal contentment and health.

Achieving complete satisfaction on this index, which significantly elevates one's subjective wellbeing, necessitates the simultaneous realization of all three food components: enjoyment, health and choice. This connection underscores the immense importance of promoting food diversity and accessibility. Enhancing these elements not only benefits physical health but also significantly boosts subjective wellbeing and overall life quality.

Thus, the study stands as a testament to the urgent need for elevating food variety and accessibility as pivotal drivers for global wellbeing.





APPENDIX MATERIAL

A1. Supplementary Information About Multivariate Analysis of Ando Survey Items and Subjective Wellbeing

TABLE 3
Thriving Regression Analysis: Selected Output

Variable	Description/ Question Wording	Variable Category	Odds Ratio (Transformed Regression Coefficient)	Interpretation
Food Wellbeing Index*	A composite measure of whether people mostly enjoyed the food they ate, thought it was mostly healthy, and felt that they had a variety of choices in the types of food they ate.	Completely satisfied	1.62	People who are "completely satisfied" (said "yes" to all three questions) are 1.62 times MORE LIKELY than those who are not completely satisfied to be thriving.
WP134*	In (this country) are you satisfied or dissatisfied with your freedom to choose what you do with your life?	Satisfied	1.58	People who are "satisfied" are 1.58 times MORE LIKELY than those who did not say they were satisfied to be thriving.
WP108*	Have you done any of the following in the past month? Donated money to a charity?	Yes	1.20	People who said "yes" are 1.20 times MORE LIKELY than those who did not say "yes" to be thriving.

Variable	Description/ Question Wording	Variable Category	Odds Ratio (Transformed Regression Coefficient)	Interpretation
WP65*	Did you learn or do something interesting yesterday?	Yes	1.44	People who said "yes" are 1.44 times MORE LIKELY than those who did not say yes to be thriving.
WP1219*	Gender	Female	1.24	Women are 1.24 times MORE LIKELY than men to be thriving.
WP1220*	Age of respondent	Single year estimate	0.98	N/A (Odds ratio near 1)
Income_5^	Income Quintiles	Second 20%	0.95	Reference category is lowest 20%
		Middle 20%	1.21	Reference category is lowest 20%
		Fourth 20%	1.27	Reference category is lowest 20%
		Richest 20%	1.63	Reference category is lowest 20%
WP3117^	Highest level of educational attainment	Completed secondary	1.09	Reference category is "completed primary"
		Completed tertiary	1.49	Reference category is "completed primary"
WP1223*	Marital status	Married/ in domestic partnership	1.17	People who are married or in a domestic partnership are 1.17 times MORE LIKELY than those who did not say they were married/in a domestic partnership to be thriving.
EMP_ FTEMP_POP	Employed full time for an employer	Not employed full time for an employer	0.99	N/A (Not statistically significant)
GDP per capita	GDP per capita (PPP) World Bank 2022 estimate	Log transformation	1.89	A 10% increase in GDP per capita is associated with an 18% increase in probability of thriving.

*Indicates a specific response category is significant at the 95% confidence level.

^For multicategory variables, such as income quintile, not all specific response categories were significant at the 95% confidence level, but the variable overall was significant as determined by an adjusted Wald test.

Additionally, the regression controlled for respondent's region and country of residence, though this output is omitted from this table. Urbanicity was also included but is omitted from the output as it was not statistically significant.

A2. Survey Method

A2.1 Survey Instruments

This survey was included as a module within the Gallup World Poll in 2022. Since 2005, the World Poll has regularly surveyed people in more than 160 countries using mixed methods of telephone and face-to-face interviewing. In a typical year, the poll results represent more than 95% of the world's population aged 15 and older, using randomly selected, nationally representative samples.

See the online appendix for more information on the Gallup World Poll.

A2.2 Translation and Quality Control

The questionnaire is translated into the major conversational languages of each country. The translation process starts with an English, French or Spanish version, depending on the region. One of two translation methods may be used. First, two independent translations are completed. An independent third party, with some knowledge of survey research methods, adjudicates the differences. A professional translator translates the final version back into the source language. Second, a translator translates into the target language. An independent third party with knowledge of survey methods reviews and revises the translation as necessary.

The Gallup World Poll core question translations remain consistent over time. Any new question items are translated according to the Gallup World Poll's quality procedures. Interviewers are instructed to follow the interview script and may not deviate from the translated language.

See the online appendix for more information on translation quality control, interviewer training and data quality control.

A2.3 Sampling and Data Collection

All samples were probability based — meaning respondents were selected randomly — and nationally representative of the aged 15 and older population. As all eligible landline exchanges and valid mobile service providers were included, the coverage area is an entire country, including rural areas. The sampling frame represents adults aged 15 and older with access to a phone (either landline or mobile). Gallup used random-digit dialing (RDD) or a nationally representative list of phone numbers.

See the online appendix for more information on how the sample generation/selection process works in practice.

A2.4 Response Rate and Data Weighting

As is the case with Gallup World Poll surveys more generally, response rates for this survey varied considerably across countries. In general, response rates are lower in countries where interviewing is conducted by telephone than in-person countries, though in many countries and territories where telephone interviewing is used, response rates are comparable to those of other polling firms. The Gallup World Poll does not publish individual country response rates.

Data weighting is also used to minimize bias in survey estimates and is intended for use in generating nationally representative estimates within a country. The weighting procedure was formulated based on the sample design and performed in multiple stages.

See the online appendix for more information on weighting approach, weight adjustments and sampling error/precision of estimates.

WOULD YOU SAY YOU MOSTLY ENJOYED THE FOOD YOU ATE? DO YOU THINK THE FOOD YOU ATE WAS MOSTLY



A3. Survey Questionnaire

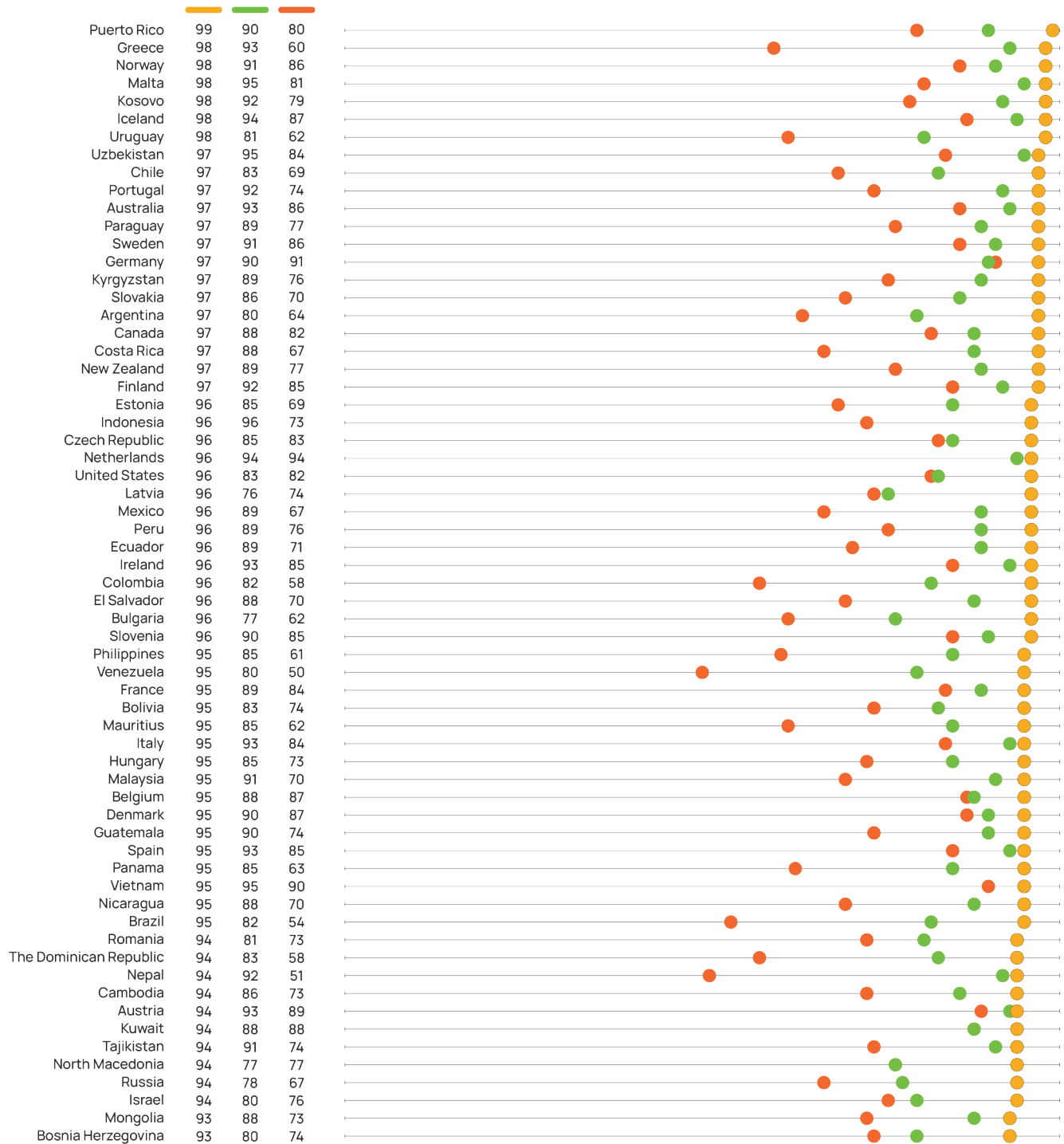
Thinking about the past 7 days...	
Would you say you mostly enjoyed the food you ate, or not?	Yes No (DK) (Refused)
Do you think the food you ate was mostly healthy, or not?	Yes No (DK) (Refused)
Did you feel you had a lot of choices in the types of food you ate each day, or not?	Yes No (DK) (Refused)

HEALTHY, OR NOT? DID YOU FEEL YOU HAD A LOT OF CHOICES IN THE TYPES OF FOOD YOU ATE EACH DAY, OR NOT?

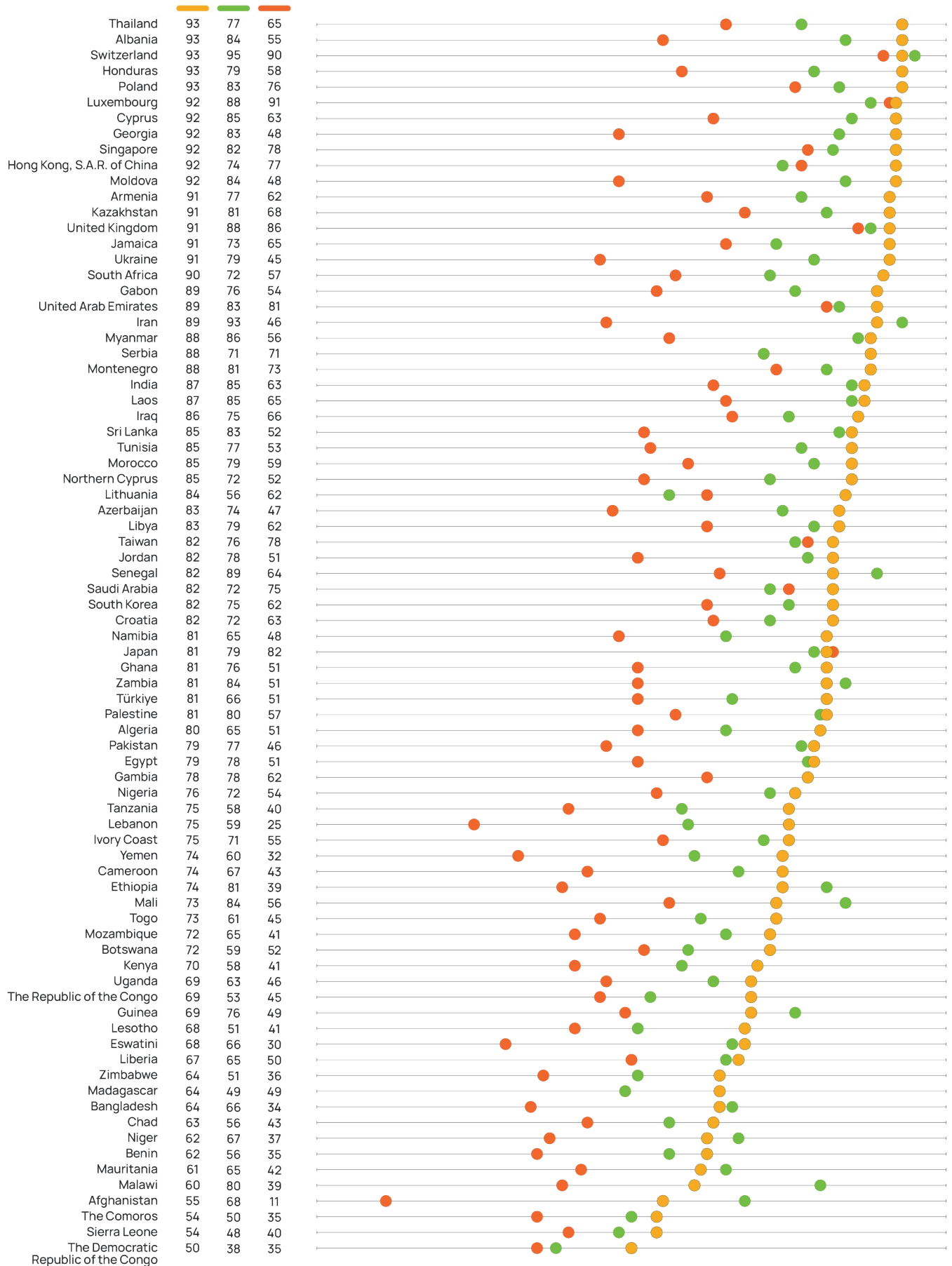
A4. Country-Level Results for All Three Survey Questions, Ranked by Food Enjoyment

FIGURE 21
Country-Level Results, Ranked by Food Enjoyment

● % Enjoyed the food you ate in past seven days ● % The food you ate was mostly healthy in past seven days
 ● % Had a lot of choices in types of food you ate in past seven days



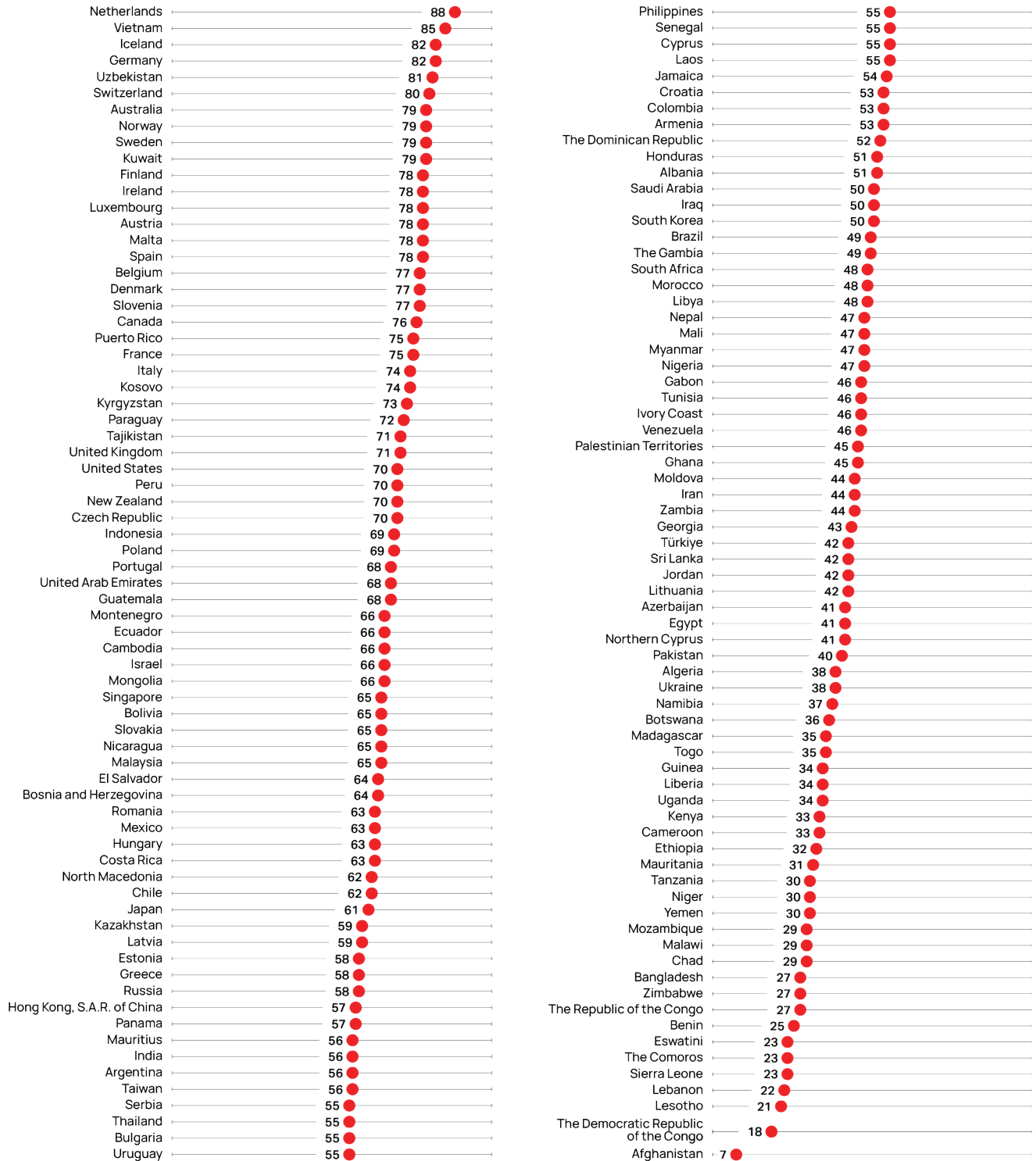
Recipes for Wellbeing Report



A5. Food Wellbeing Index: Country-Level Distribution

FIGURE 22

Food Wellbeing Index, by Country



A6. Regional Groupings

In analyzing the results from 142 countries and territories, this report uses the following regional groupings:

Region	Countries
Arab States	Lebanon, Saudi Arabia, Jordan, Palestinian Territories, Iraq, Kuwait, United Arab Emirates and Yemen
Central and Western Asia	Türkiye, Israel, Georgia, Kazakhstan, Kyrgyzstan, Armenia, Azerbaijan, Cyprus, Tajikistan, Uzbekistan and Northern Cyprus
Eastern Asia	Hong Kong (S.A.R. of China), Japan, South Korea, Taiwan and Mongolia
Eastern Europe	Poland, Hungary, Czech Republic, Romania, Moldova, Russia, Ukraine, Bulgaria and Slovakia
Latin America and the Caribbean	Venezuela, Brazil, Mexico, Costa Rica, Argentina, Bolivia, Chile, Colombia, The Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, Puerto Rico and Uruguay
Northern Africa	Egypt, Morocco, Algeria, Libya and Tunisia
Northern America	United States and Canada
Northern, Southern and Western Europe	United Kingdom, France, Germany, Netherlands, Belgium, Spain, Italy, Sweden, Greece, Denmark, Albania, Austria, Bosnia and Herzegovina, Croatia, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Luxembourg, North Macedonia, Malta, Montenegro, Norway, Portugal, Serbia, Slovenia, Switzerland and Kosovo
Southeastern Asia and the Pacific	Indonesia, Singapore, Australia, Philippines, Vietnam, Thailand, Cambodia, Laos, Myanmar, New Zealand and Malaysia
Southern Asia	Pakistan, Bangladesh, Iran, India, Sri Lanka, Afghanistan and Nepal
Sub-Saharan Africa	Nigeria, Kenya, Tanzania, Ghana, Uganda, Benin, Madagascar, Malawi, South Africa, Botswana, Ethiopia, Mali, Mauritania, Mozambique, Niger, Senegal, Zambia, Cameroon, Sierra Leone, Zimbabwe, Chad, The Comoros, The Democratic Republic of the Congo, The Republic of the Congo, Gabon, Guinea, Côte d'Ivoire, Lesotho, Liberia, Mauritius, Namibia, Eswatini, The Gambia and Togo

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