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How do Consumers Interact with Environmental Sustainability Claims on Food? Evidence from 40 countries

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This paper presents new evidence on how consumers interact with sustainability claims on food products, based on a survey of 37 000 consumers in 40 countries. Respondents are generally most interested in natural, locally produced, eco-friendly and organic claims. Trust and broader attitudes and beliefs regarding the environment play an important role in shaping consumers' willingness to pay more for products with a sustainability claim. For most claims, willingness to pay is also higher among consumers with higher incomes and education. Even after controlling for these factors, there are significant differences among countries. In some countries, people are generally distrustful of claims, while in others people have greater trust. This suggests that consumer trust may be shaped less by the specifics of a claim and more by country-specific factors. This interpretation is consistent with data suggesting that consumers have only a limited understanding of what different claims mean.

Key words: Assurance schemes; Eco-labelling; Willingness to pay; Food systems

JEL Codes: D12, D91, L15, Q18, Q51

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Key messages

- Changes in consumer behaviour could play an important role in improving the environmental sustainability of food systems, but there are many open questions around consumers' beliefs, attitudes, and behaviours. This paper presents new cross-country evidence on how consumers interact with sustainability claims and labels on food products, based on survey responses of 37 000 consumers in 40 countries.
- Even well-known claims such as *organic* or *natural* tend to have a relatively low prevalence, when looked at across all food products and countries. However, some studies suggest that the market share for food products with environmental sustainability claims may be growing. Among the different food product claims that consumers may perceive as involving environmental sustainability, consumers in the surveys are generally most interested in *natural*, *locally produced*, *eco-friendly* (environmentally friendly), and *organic* claims.
- Several factors make it less likely that consumers will purchase products with sustainability claims. These are a lack of affordability (a high price of sustainable products relative to alternatives), confusion (e.g. unclear labeling) and a lack of understanding (consumers are not sure what sustainability features to look for), a lack of availability in the places where consumers typically shop, a lack of trust in the claims made on products, and broader attitudes and beliefs (e.g. a lack of interest in sustainable products).
- Statistical analysis on survey responses of 37 000 consumers in 40 countries confirms that trust and broader attitudes and beliefs regarding the environment play an important role in shaping consumers' willingness to pay more for products with a sustainability claim. For most claims, willingness to pay is also higher among consumers with higher incomes and education. Age differences were found for some but not all claims, while gender effects are generally quite small. Even after controlling for these factors, there are significant differences among countries.
- Consumers' trust in claims is highly correlated within a country: in some countries, people are generally distrustful of claims, while in other countries people have greater trust. These findings suggest that consumer trust may be shaped less by the specifics of a label or assurance scheme and more by country-specific factors. This interpretation is consistent with data suggesting that consumers have only a limited understanding of what different claims mean.
- The analysis in this paper has some limitations. For example, this paper looked only at consumer behaviour with respect to claims on products (rather than e.g. food waste or recycling behaviours). The paper did not look at product labels showing quantified environmental impacts. Moreover, consumers' actual behaviours may be quite different from how they answer survey questions. There is also the possibility that consumers in different countries understand and answer the same question differently.

1. Introduction

Food systems are responsible for major environmental impacts, including GHG emissions, land use change, water use, and eutrophication (Poore and Nemecek, 2018[1]). Changes in consumer behaviour could make an important contribution towards improving the environmental sustainability of food systems (Tilman and Clark, 2014[2]) (Springmann et al., 2018[3]). However, there are still many evidence gaps around consumer attitudes and behaviour with respect to the environmental sustainability of food.

Changes in consumer behaviour could improve the environmental sustainability of food systems in several ways, catalyzing shifts in production patterns towards more sustainable outcomes. There are at least three "levers" through which changes in consumption patterns could improve the environmental sustainability of food systems (Deconinck, Jansen and Barisone, 2023[4]):

- First, consumers could shift from product categories with higher average environmental impacts to product categories with lower average impacts. Globally, the available evidence indicates that livestock products tend to have higher average impacts than plant-based products, with ruminant products having higher impacts than non-ruminant products (Poore and Nemecek, 2018[1]).
- However, the evidence also indicates large variability of environmental impacts within each product category, even for producers in the same country (Poore and Nemecek, 2018[1]). A second lever is therefore for consumers to shift from producers with above-average impacts to producers with a below-average impact, within the same product category.
- A third potential lever is that changes in consumption patterns would in turn incentivize producers to also invest in more sustainable production practices, leading to lower environmental impacts of food products across and within categories.

The potential impacts of such changes are large. For example, one analysis estimated that a hypothetical global shift to diets that exclude animal products but substitute these with plant-based proteins would reduce global agricultural land use by 76% and GHG emissions from food by 49%, and would allow the return of natural vegetation to around 3 billion hectares of land, with potentially large benefits through carbon sequestration in soils and biomass (Poore and Nemecek, 2018[1]). This is admittedly an extreme scenario, but even more modest changes can have significant effects. For example, bringing global consumption patterns in line with global dietary guidelines of the World Health Organization could reduce GHG emissions from food by 29% in 2050, with additional improvements in other environmental indicators (cropland use, water use, nitrogen application, phosphorus application) of 5-9% (Springmann et al., 2018[3]). Other analyses also indicate that shifting to more sustainable diets could help with climate mitigation (Roe et al., 2021[5]) (Tallard et al., 2022[6]).

This paper provides new cross-country empirical evidence on consumer behaviour regarding environmental sustainability of food, as well as a review of relevant literature.

The focus in this paper is on behaviour with respect to *claims and labels* such as natural, organic, environmentally friendly, Rainforest Alliance, etc., because such claims and labels have been the focus of most of the available literature and datasets.[1] Some of these claims are not purely about environmental sustainability. For example, sustainability standards and labels may also cover social and economic dimensions of sustainability (Traldi, 2021[7]), or may be associated in consumers' minds with possible benefits in terms of food safety, health, or taste (Büttner, Gassler and Teuber, 2024[8]). In other cases (e.g. animal welfare claims), it is not clear whether consumers perceive the claim as relating to environmental sustainability. Even claims with a specific environmental focus are not necessarily better for the environment (for example, they may represent "greenwashing"). Since the focus is on understanding consumer behaviour, this paper takes a broad view of the relevant claims and labels without evaluating their actual effectiveness in terms of improving environmental sustainability. The claims and labels studied

[1] Several terms are often used to describe such claims and labels, e.g. (voluntary) eco-labels, sustainability labels, environmental labelling and information schemes (ELIS) (Gruère, 2013[64]), environmental, social and governance (ESG) product claims (McKinsey, 2023[65]), and so on. These terms are not always synonyms but are often largely overlapping. The set of claims and labels studied in this paper is largely shaped by data availability.

in this paper are also heterogeneous in terms of their assurance model: while some are based on clearly defined standards and third-party verification, others lack these features.

It is important to note that the focus of this paper leaves out many important aspects of consumer behaviour. In particular, labels communicating the quantified environmental impact of food products could change consumer behaviour (Boone et al., 2023[9]). Several initiatives have been developed in recent years, such as the GHG reduction label on food products in Japan (Box 1.1). Such labels are not covered in this report, because the evidence on their effectiveness is still limited. However, ongoing work by the OECD is studying initiatives to measure and communicate environmental impacts of food products.[2]

Box 1.1. Japan: GHG reduction label on food products

Most sustainability labels on food are based on certification of adherence to a set of practices, rather than quantification of environmental impacts. However, a recent trend is the emergence of labels based on quantified environmental impacts (Boone et al., 2023[9]) (Deconinck, Jansen and Barisone, 2023[4]) (Deconinck and Hobeika, 2023[10]). One example is the development in Japan of a label to communicate efforts to reduce GHG emissions to consumers.

In May 2021, the Japanese Ministry of Agriculture, Forestry and Fisheries (MAFF) introduced the "MIDORI Strategy" to establish sustainable food systems.[3] This strategy sets 14 targets by 2050 including 100% reduction of CO_2 emissions from fossil fuels combustion in the agriculture, forestry, and fisheries sectors, reducing chemical pesticide and fertiliser use and increasing organic farming, and encouraging stakeholders such as farmers and related businesses to adopt and continue practices that reduce their environmental impacts. One of the main initiatives is a label to communicate the efforts of these stakeholders in reducing farming-related GHG emissions to consumers. Following a pilot programme started in 2022, an official labeling system was launched in March 2024.

In the past, MAFF conducted a project (jointly with other ministries) to measure the carbon footprint of products, including agricultural products. However, there were challenges related to calculating and obtaining appropriate data, cost, and a lack of information on the most relevant technology to reduce carbon emissions. In 2020, MAFF therefore established an expert committee to develop approaches to evaluate and communicate efforts to reduce GHG emissions. In 2022, the “MIDORI Act” was passed, providing a legal framework for further initiatives, in which the communication and visualisation of GHG reduction was identified by the national government as a priority measure.

The committee in 2020 included various stakeholders: researchers (in the fields of life cycle assessment, environmental and agricultural science, and consumer communication), environmental consultants, producers, and private companies (retailers and manufacturers). MAFF consequently developed a simplified calculation spreadsheet for GHG emission of agricultural products.[4] The calculation formula and methodology are mainly based on Japan’s National GHG Inventory Report.[5] Its prototype allowed the evaluation of three food products in 2021: rice, tomatoes, and cucumbers. In

[2] Historically, efforts to change consumer behaviour regarding environmental sustainability have focused on the use of assurance schemes (voluntary standards and labels) (Deconinck and Hobeika, 2023[10]). These approaches are widespread but have significant limitations. Existing labels tend to focus on practices, rather than measured environmental outcomes. As such, the labels can help differentiate *within* a product category (e.g. apples with and without sustainability label) but do not help consumers shift *between* product categories (e.g. from ruminant to non-ruminant meat products). Moreover, labelled products are not necessarily more environmentally sustainable than their un-labeled counterparts (Seufert and Ramankutty, 2017[62]) (Meemken and Qaim, 2018[63]). To make matters worse, not all claims on products are based on an assurance scheme with a clearly defined standard and third-party verification. This is true in many countries for claims such as “natural” or “environmentally friendly”.

[3] Information in this section was provided by Japan’s Ministry of Agriculture, Forestry and Fisheries (MAFF).

[4] More information available at: https://www.maff.go.jp/j/kanbo/kankyo/seisaku/santei_manual.pdf

[5] More information available at: https://www.nies.go.jp/gio/en/archive/nir/pi5dm3000010ii0r-att/NID-JPN-2024-v3.0_gioweb.pdf

2022, 20 additional products (fruits, vegetables, and green tea) were included. The approach is self-declared (i.e. self-calculated and labelled) to ensure greater accessibility for producers. However, in accordance with MAFF's guidelines for the initiative, producers submit the spreadsheet in which GHG emissions were calculated based on their primary production data to MAFF, allowing to check for suspicious data.

A 2020 progress report sheds light on consumer awareness and attitudes towards the GHG reduction label, specifically on products like tomatoes, rice, and cucumbers.[6] Findings from a survey in the pilot programme indicate a 42% recognition rate of the label in-store, significantly higher than the 10% online recognition rate, leading to an overall 22% recognition rate. Interestingly, older age groups displayed a more positive attitude towards the label compared to younger demographics. Consumers cited environmental benefits, trust in the transparency of information, perceived higher food quality, and curiosity about the innovative labeling as key factors driving their positive reception. Additionally, in 2023, 95% of respondents had a positive impression of the stores that introduced food products with the GHG reduction label.

According to another poll conducted by the Japanese government in 2023, approximately 80% of respondents indicated that they were willing to purchase agricultural crops produced in an environmentally friendly manner.[7] Of the respondents who were not willing to pay for such products, around 60% admitted that they were unsure which agricultural products were environmentally friendly. Therefore, it is anticipated that the GHG reduction label will prove beneficial for consumers to identify environmentally friendly agricultural products during its full-scale implementation.

The empirical analysis in this paper relies on two main data sources. These are the Euromonitor *Sustainability Claims Tracker* (2022 edition) and the Euromonitor *Voice of the Consumer: Sustainability* survey (2023 edition). See Annex A for a discussion of the Euromonitor databases. The paper also incorporates some findings from the food component of the 2022 OECD Environmental Policies and Individual Behaviour Change (EPIC) Survey.

As pointed out in previous OECD work (Deconinck and Hobeika, 2023[10]) (OECD, 2023[11]), there is often also a gap between consumers' stated intentions and their actual shopping behaviours when it comes to environmental sustainability. Because of data limitations, much of the available scientific literature has focused on consumers' stated intentions (for example, in consumer surveys such as the Euromonitor *Voice of the Consumer* survey) or consumer behaviour in experimental settings. These findings do not necessarily carry over to real-world settings.[8] However, evidence on consumers' stated intentions or behaviour in experimental settings may still provide useful information on the role of socio-economic characteristics or other drivers of individual behaviour.[9] Hence, while information on the *levels* (frequency of purchase, willingness to pay, etc) should be interpreted with caution, information on the *correlations* (e.g. socio-economic drivers, country-specific effects) is more likely to be meaningful. This paper complements analysis on stated intentions with information on the availability of claims on products, based

[6] See https://www.maff.go.jp/j/kanbo/kankyo/seisaku/climate/visual/attach/pdf/r4_2-5.pdf.

[7] See https://survey.gov-online.go.jp/r05/r05-shokuryou/gairyaku.pdf.

[8] For a detailed discussion on this "hypothetical bias" (the finding that the willingness to pay as estimated in hypothetical studies tends to be considerably higher than what is observed in non-hypothetical studies), see Lusk (2018[66]), who also notes that there is no consensus on the underlying causes of hypothetical bias. Lusk (2018[66]) points out that choice experiments (a common technique in the empirical literature cited in this paper) may be less subject to hypothetical bias than some other methods, and can be used for predicting market shares, but when experiments ask about attributes seen as socially desirable, participants' responses may be influenced by what they think are the beliefs held by the researcher. Findings from hypothetical settings are therefore best interpreted with caution.

[9] As a hypothetical example, a survey might find that 40% of consumers report regularly purchasing products with a sustainability label, whereas market shares suggest the true figure is much lower. The survey would thus overstate consumers' actual behaviour. But the survey might also find that, for example, consumers with higher levels of education are more likely to report purchasing those products. It seems likely that these kinds of correlations would also hold among consumers who do purchase those products.

on Euromonitor's *Sustainability Claims Tracker*. This data source provides information on the prevalence of claims and labels on products. While this looks at the supply side, firms presumably introduce product claims when they see a market opportunity; the data can thus provide indirect evidence on consumer interest, or at least firms' perception of it.

Given the broad scope of issues that are included within the topic of consumer behaviour, including consumer attitudes and beliefs and the underlying drivers of those attitudes and beliefs, this paper seeks to fill a gap with respect to empirical analysis of drivers of observed consumer behavior. This paper first discusses information on the prevalence of claims and labels (Section 2) and self-reported behaviour and stated intentions (Section 3), before discussing the role of consumer demographics and consumer segments (Section 4) and the role of various possible barriers to more sustainable purchases (Section 5). Section 6 brings together many of these insights into an empirical analysis of consumers' stated willingness to pay more for products with sustainability claims. Section 7 provides some further insights in the role of trust, while Section 8 concludes. Throughout the paper, new empirical findings are presented side by side with a discussion of relevant findings from the literature.

2. Prevalence of environmental sustainability claims on food products

The Euromonitor data can be used to explore the prevalence of sustainability claims on food products in different product categories and countries. Euromonitor's Sustainability Claims Tracker calculates the share of products in each product category containing a sustainability claim, using data obtained from retailer websites (an approach known as the "share of digital shelf"). Since firms generally do not introduce new products (or products with new sustainability claims) without market research, the prevalence of claims provides indirect evidence on which claims are expected to be more popular with consumers, in which product categories, and in which countries.[10] Euromonitor's Sustainability Claims Tracker gathers information for 25 markets in 2022, covering 16 food product categories and 61 sustainability claims. The 25 markets are Argentina, Australia, Brazil, Canada, Chile, The People's Republic of China (hereafter "China), France, Germany, Hong Kong (China), India, Indonesia, Italy, Japan, Mexico, the Netherlands, Poland, Saudi Arabia, Singapore, South Africa, Korea, Spain, Sweden, the United States, the United Arab Emirates, and the United Kingdom.

The 16 food product categories are:

- Staple food (five food product categories): Baked goods; breakfast cereals; processed fruit and vegetables; processed meat and seafood; rice, pasta and noodles.
- Cooking ingredients and meals (four product categories): Edible oils; meals and soups; sauces, dips and condiments; and sweet spreads.
- Dairy products and alternatives (three product categories): Dairy; plant-based dairy; and baby food (which includes milk formula, but also prepared, dried, and other baby food).
- Snacks (four product categories): Confectionery; ice cream; savoury snacks; and sweet biscuits, snack bars and fruit snacks.

[10] If it were costless to add a claim, and there was a non-zero probability that doing so would attract new customers without alienating existing ones, firms would put every possible claim on their product. In reality, the "share of digital shelf" is considerably lower, and varies by claim, by product category, and by country. This suggests that adding a claim is not costless, so that firms are strategic about which claims to add. Presumably their choices reflect an estimate of where consumer demand is greatest.

The 61 different claims include claims around animal welfare, suitability for specific diets (e.g. vegetarian, vegan, plant-based), the absence of "artificial ingredients", the use of sustainable packaging, and so on. The claims are not mutually exclusive: a product can have more than one claim.

The analysis here focuses on the two most popular claims on food products across the Euromonitor database: *Natural* and *Organic*.[11] Evidence on some other claims is discussed briefly as well. (As noted earlier, some of these claims may be associated in consumers' minds with other dimensions of sustainability and/or other benefits, e.g. in terms of health or taste). Figure 2.1 shows the average share of digital shelf (across the 16 product categories in scope) of the claims.

For both claims, wealthier countries in Western Europe and North America show higher shares, while shares are generally much lower in Asian and South American markets, albeit with some exceptions. However, there are some differences in which claims are most popular in which countries. For example, France clearly stands out with 26% of the total number of food products on the "digital shelf" carrying the *Organic* claim. Predominantly English-speaking countries (Canada, Australia, the United Kingdom, and the United States) are characterised by relatively high shares of products carrying the *Natural* claim, compared to most continental European countries.[12]

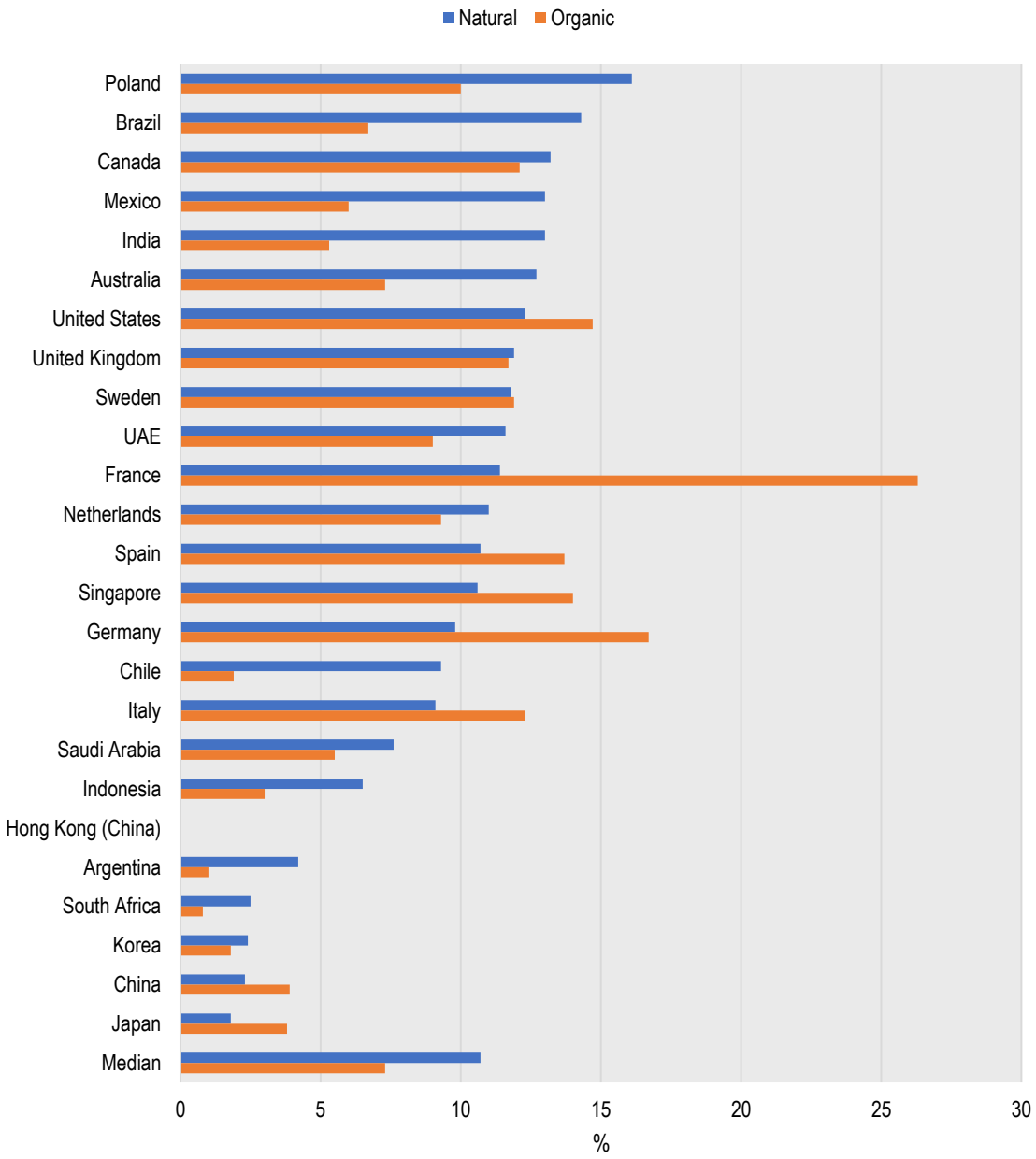
By comparison, the digital share of shelf is considerably smaller for other claims. For example, while the median share across the countries is 11% for *natural* claims and 7% for *organic*, the median share for *environmentally friendly* is around 1%. Across all countries, the shares of *Rainforest Alliance*, *free range*, *fair trade*, *locally sourced*, *sustainably fed/raised*, or *from sustainable sources* claims are below 5%. Claims around sustainable packaging are more popular, and attain a digital share of shelf of above 5% in some countries such as Italy, the United Kingdom or Poland.

It is also possible to study the share of digital shelf within the 16 food product categories. As Figure 2.2 shows, although the precise ranking varies for each claim, all three types of claims tend to be common for sweet spreads, plant-based dairy, breakfast cereals, and edible oils, while the *organic* claim is particularly prevalent on baby food.

[11] In the Euromonitor Sustainability Claims Tracker, *natural* covers related claims such as "100% natural", "all natural", "naturally" and other synonyms; *organic* covers related claims and translations such as "bio", and "environmentally friendly" covers claims such as "eco friendly", "non-polluting", "environmentally safe", "eco", "ecological", "supports the environment" etc. Across all countries and food product categories, *natural* and *organic* are the two most common claims.

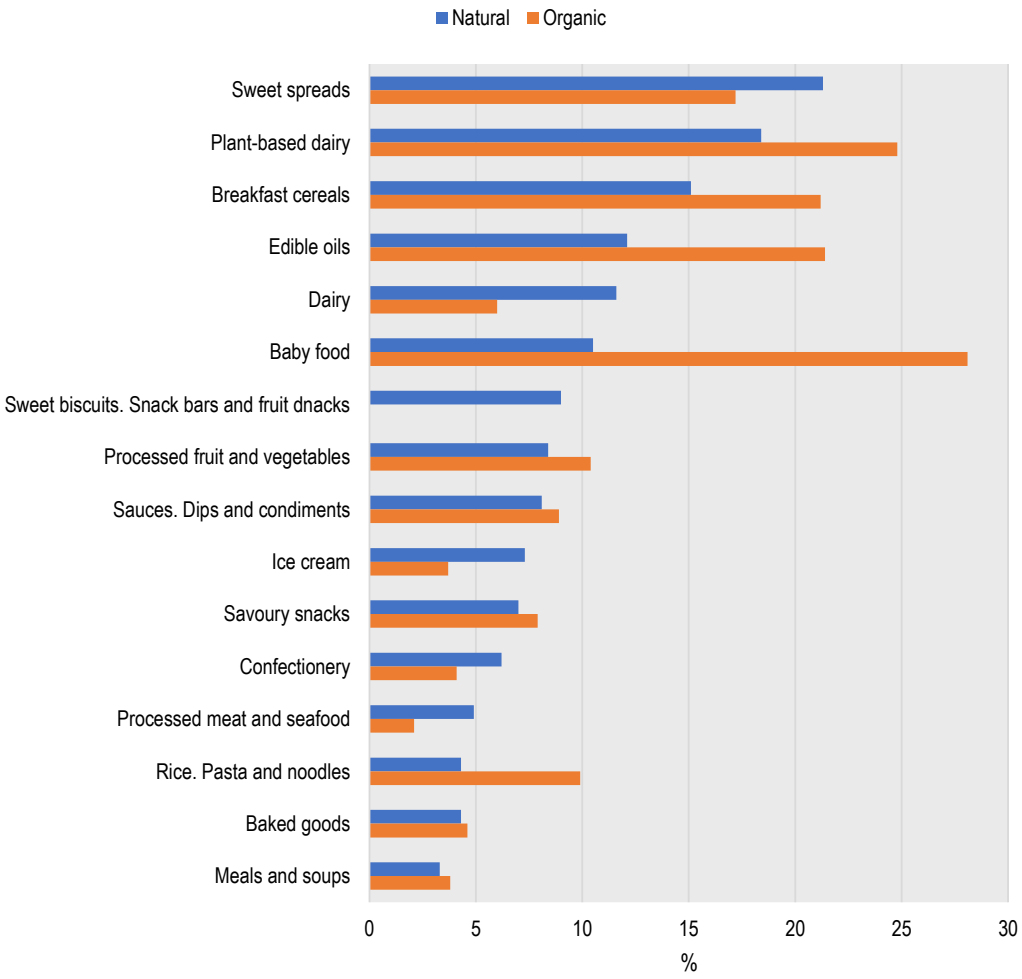
[12] In the United States, *organic* claims have a higher digital share of shelf than *natural* claims, although both are at similar levels (between 10-15%). Actual market share data shows that *natural* claims are in fact more popular. Food items labeled as *Natural* represented 16% of total retail food expenditures in retail outlets in 2018, which exceeded spending on foods with the USDA *Organic* label. The distribution of *Natural* claims varies significantly among different food categories. The leading category was dairy products, where 28% of retail spending went to dairy products with a *Natural* label in 2018 (Kuchler, Sweitzer and Chelius, 2023[45]). This example shows that caution is needed in interpreting digital share of shelf data, as the prevalence of a claim on products is not the same as its actual market share.

Figure 2.1. Share of digital shelf (% of food products) with *Natural* or *Organic* claims, by country, 2022



Note: Share of all stock-keeping units (SKUs) carrying the Natural and Organic claims, across the 16 food product categories in scope. Countries are ranked based on prevalence of the Natural claim.
Source: OECD analysis based on Euromonitor Sustainability Claims Tracker data

Figure 2.2. Share of digital shelf (% of food products) with *Natural* or *Organic* claim, by product category, 2022



Note: Share of all stock-keeping units (SKUs) carrying a *Natural* or *Organic* claim, across the 25 markets in scope.
Source: OECD analysis based on Euromonitor Sustainability Claims Tracker data

As with the country level data, the digital share of shelf tends to be much lower for other claims. *Environmentally friendly* claims typically have a share below 10% (except for plant-based dairy, where it reaches 11%). The share of products with a *Rainforest Alliance* label, or *free range*, *fair trade*, *locally sourced*, or *sustainably fed/raised* claims is usually below 1%. Claims around sustainable packaging are somewhat more popular, although for most product categories the share of shelf is below 5%. Exceptions here are ice cream, breakfast cereals, and plant-based dairy products.

The data thus shows that some claims are particularly prevalent in some countries and for some product categories. Overall, however, prevalence of individual sustainability claims is relatively low. [13] This is consistent with findings on actual market shares: despite consumers' stated intentions and experimental findings, market shares of products with sustainability labels typically remain low. For example, in most countries in 2020 the retail market shares of *organic* food products (one of the most widely known sustainability claims) did not exceed 10% (Deconinck and Hobeika, 2023[10]).

In the Netherlands, the government tracks the share of "sustainable food" consumption on the domestic market through the Sustainable Food Monitor initiative (Box 2.1). Again, the data confirms that market shares of food with sustainability claims remain relatively low: in 2022, Dutch consumers spent 18% of total consumer food spending on sustainable food, most of which was spent on food products with the animal welfare label, followed by Rainforest Alliance, and by the organic label.

Box 2.1. The Netherlands: *Sustainable Food Monitor 2022* tracking sustainable food consumption

The Dutch Ministry of Agriculture, Nature and Food Quality (LNV) commissioned the *Sustainable Food Monitor 2022* to get a better understanding of the sustainability of food supply chains within the Netherlands (Logatcheva and Herceglic, 2023[12]).

The Monitor provides information to track developments in domestic sustainable food consumption. Sustainable food is defined here as "food for which environmental, animal welfare and/or social aspects have been taken into account during production and processing to a greater extent than required by law".

The initiative began with an examination of consumer spending in 2022 on foods that are identifiable as sustainable in one or more aspects. Recognisability was determined based on labels with third-party verification. The Monitor focused on consumer products, excluding products which may lack visible labels that allow consumers to recognise them as sustainable (such as products that are sold in bulk or are not packaged).

Using these definitions, in 2022 the proportion of sustainable food represented 18% of total consumer food spending in the Netherlands. Consumers spent approximately EUR 3.8 billion on products with the Beter Leven animal welfare claim, EUR 2.6 billion on Rainforest Alliance products, and EUR 1.8 billion on organic products.

However, market shares of food products with sustainability claims seem to have experienced faster growth than products without these claims. For example, shopping data from the United States shows that in 11 out of 15 food categories, between 2018-2022 there was significant retail sales growth observed in products that made sustainability claims compared to products without claims (McKinsey, 2023[13]). These findings are consistent with previous studies showing that products with sustainability claims are gaining market share (IRI and NYU Stern, 2022[14]).

[13] Euromonitor also provides an estimate of the digital share of shelf of all 61 sustainability claims taken together. Using this broad measure, the share of shelf is much higher. Across the 25 countries, the share is 28% for staple foods, 38% for dairy products and alternatives, 30% for snacks, and 31% for cooking ingredients and meals, and is above 50% for several countries, meaning most products in those countries have at least one kind of sustainability claim. However, this uses the broadest possible definition of sustainability claims, including for example claims that a product is suitable for vegetarian or vegan diets, or does not contain genetically modified organisms.

3. Self-reported behaviour and stated intentions

In addition to information on the prevalence of claims, another source of information is self-reported behaviour and stated intentions.

Consumers surveyed by Euromonitor were asked if, in the past month, they had purchased a product with any of the following features: *environmentally friendly*; *sustainable packaging*; *low carbon/carbon neutral*; *sustainable sourcing*; *vegan/vegetarian/plant-based*; *water-saving/waterless*; *no artificial or chemical ingredients*; *zero waste; animal welfare*; *biodynamic/regenerative*; none of the above.[14] The question did not mention any specific product category, but many of these features are clearly relevant for food purchases. Again, not all of these labels are exclusively or even mainly related to environmental sustainability; the analysis here deliberately takes a broad view in order to better understand consumer behaviour.

The Euromonitor customer survey also asked respondents to select the claims that they look for when buying food (Figure 3.2). The question asked about the following claims: environmentally conscious or eco-friendly; non-GMO (genetically modified organism); sustainably produced or raised; hormone free; grass fed/pasture raised; free range; all natural; 100% organic; fair trade or UTZ certified; locally sourced or manufactured locally; supports local communities; supports a charity or charitable cause; strong or well-known brand (as perceived by the respondent). (A brand is not a sustainability claim, but serves as a useful benchmark for the relative importance of sustainability claims).

All natural is the most commonly cited claim (35%), followed by whether the product is from a strong or well-known brand (26%). *Locally sourced* (25%), *Eco-friendly* (23%) and *100% organic* (22%) complete the top-five. (The specific wording of the claims in this survey differs somewhat from that in the dataset used in the previous section). At the other end of the spectrum, consumers much less frequently report looking for products that claim to support a charitable cause, or products from grass fed production systems.

Consumers in the Euromonitor survey were also asked whether or not they would be willing to pay more for certain claims when buying food. Results here are broadly consistent with Figure 3.2, with the same claims in the top-five. *All natural* is again the most popular claim.

It should be noted that countries may have specific assurance schemes and labels which do not exist in other countries. These would be difficult to represent in a cross-country dataset. An example is the Red Tractor scheme in the United Kingdom, which is widely used by consumers (Box 3.1).

How do these findings compare with the literature? Reviews of the experimental literature generally find that sustainability labels do matter to consumers, as reflected in, for example, a higher (stated) willingness to pay for products with an environmental sustainability claim . The systematic review by Potter et al. reveals that in almost 80% of the experiments that tested the use of various kinds of sustainability-related food labels, they had a positive effect on the selection, purchase or consumption of products in experimental settings. While sustainability claims and labels thus seem to affect consumers' stated intentions, the magnitude of these effects also should not be overstated. For example, when experiments find a positive effect of claims on average, this effect may be driven by a sub-group of consumers. Consistent with the findings of the Euromonitor data, many consumers do not use labels when making their shopping decisions .

In their review of the literature, Onwezen et al. find that evidence is strongest for the effectiveness of the Fairtrade label, compared to e.g. organic, carbon footprint, water footprint, or animal welfare claims, or products with multiple claims. This differs from the findings in Figure 3.2 and Figure 3.3, where organic claims score higher than Fairtrade.

Figure 3.1 is a heatmap chart, with colours representing the share of respondents having purchased a product with a given claim in the past month across the 40 countries in the survey. The colour of each cell

[14] The Euromonitor Voice of the Consumer survey does not provide any precise definitions for these terms; their interpretation is thus left to the respondent.

is based on the corresponding value, with green denoting a higher share and red a lower share. Values range from 3% to 67%.

The two most frequently reported purchases were products carrying the *Environmentally friendly* claim (36%) and the *Sustainable packaging* claim (33%). At the other end of the spectrum, claims related to *Biodynamic/regenerative* (11%) or *Water-saving* (16%) were mentioned much less. A significant share of respondents (23%) reported not having purchased any product with one of these claims. Across the ten claims, on average 30% or more of respondents in India, the Philippines and Indonesia reported a purchase; in Japan, the corresponding figure is 9%. The ranking of claims is roughly similar across countries, with some exceptions: for example, *Environmentally friendly* claims appear less popular in Spain than *Sustainable packaging*.

The Euromonitor customer survey also asked respondents to select the claims that they look for when buying food (Figure 3.2). The question asked about the following claims: environmentally conscious or eco-friendly; non-GMO (genetically modified organism); sustainably produced or raised; hormone free; grass fed/pasture raised; free range; all natural; 100% organic; fair trade or UTZ certified; locally sourced or manufactured locally; supports local communities; supports a charity or charitable cause; strong or well-known brand (as perceived by the respondent). (A brand is not a sustainability claim, but serves as a useful benchmark for the relative importance of sustainability claims).

All natural is the most commonly cited claim (35%), followed by whether the product is from a strong or well-known brand (26%). *Locally sourced* (25%), *Eco-friendly* (23%) and *100% organic* (22%) complete the top-five. (The specific wording of the claims in this survey differs somewhat from that in the dataset used in the previous section). At the other end of the spectrum, consumers much less frequently report looking for products that claim to support a charitable cause, or products from grass fed production systems.

Consumers in the Euromonitor survey were also asked whether or not they would be willing to pay more for certain claims when buying food. Results here are broadly consistent with Figure 3.2, with the same claims in the top-five. *All natural* is again the most popular claim.

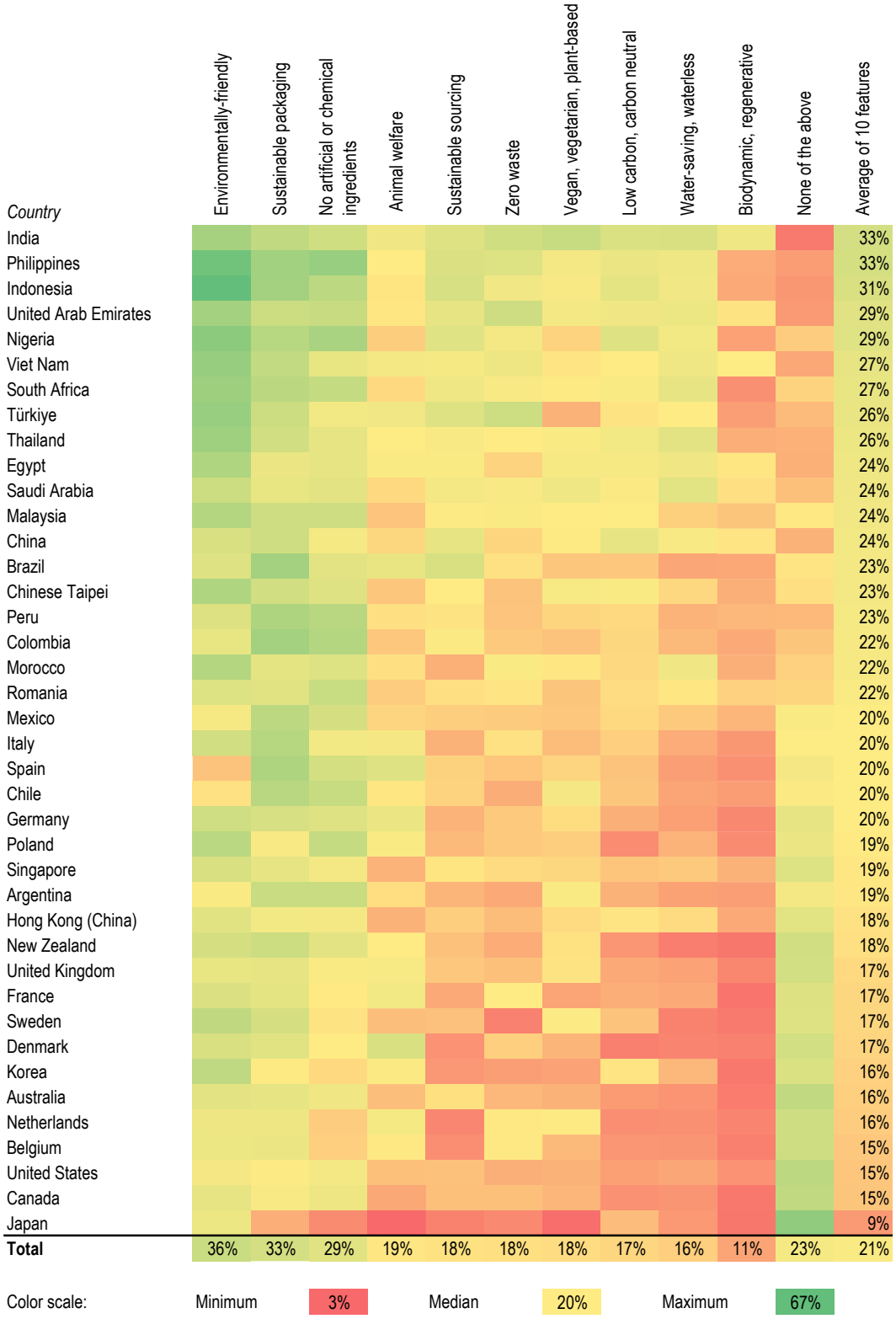
It should be noted that countries may have specific assurance schemes and labels which do not exist in other countries. These would be difficult to represent in a cross-country dataset. An example is the Red Tractor scheme in the United Kingdom, which is widely used by consumers (Box 3.1).

How do these findings compare with the literature? Reviews of the experimental literature generally find that sustainability labels do matter to consumers, as reflected in, for example, a higher (stated) willingness to pay for products with an environmental sustainability claim (Potter et al., 2021[16]) (Bastounis et al., 2021[17]) (Cook et al., 2023[18]) (Onwezen et al., 2021[19]). The systematic review by Potter et al. (2021[16]) reveals that in almost 80% of the experiments that tested the use of various kinds of sustainability-related food labels, they had a positive effect on the selection, purchase or consumption of products in experimental settings. While sustainability claims and labels thus seem to affect consumers' stated intentions, the magnitude of these effects also should not be overstated. For example, when experiments find a positive effect of claims on average, this effect may be driven by a sub-group of consumers.[15] Consistent with the findings of the Euromonitor data, many consumers do not use labels when making their shopping decisions (Grunert, Hieke and Wills, 2014[20]).

In their review of the literature, Onwezen et al. (2021[19]) find that evidence is strongest for the effectiveness of the Fairtrade label, compared to e.g. organic, carbon footprint, water footprint, or animal welfare claims, or products with multiple claims. This differs from the findings in Figure 3.2 and Figure 3.3, where organic claims score higher than Fairtrade.

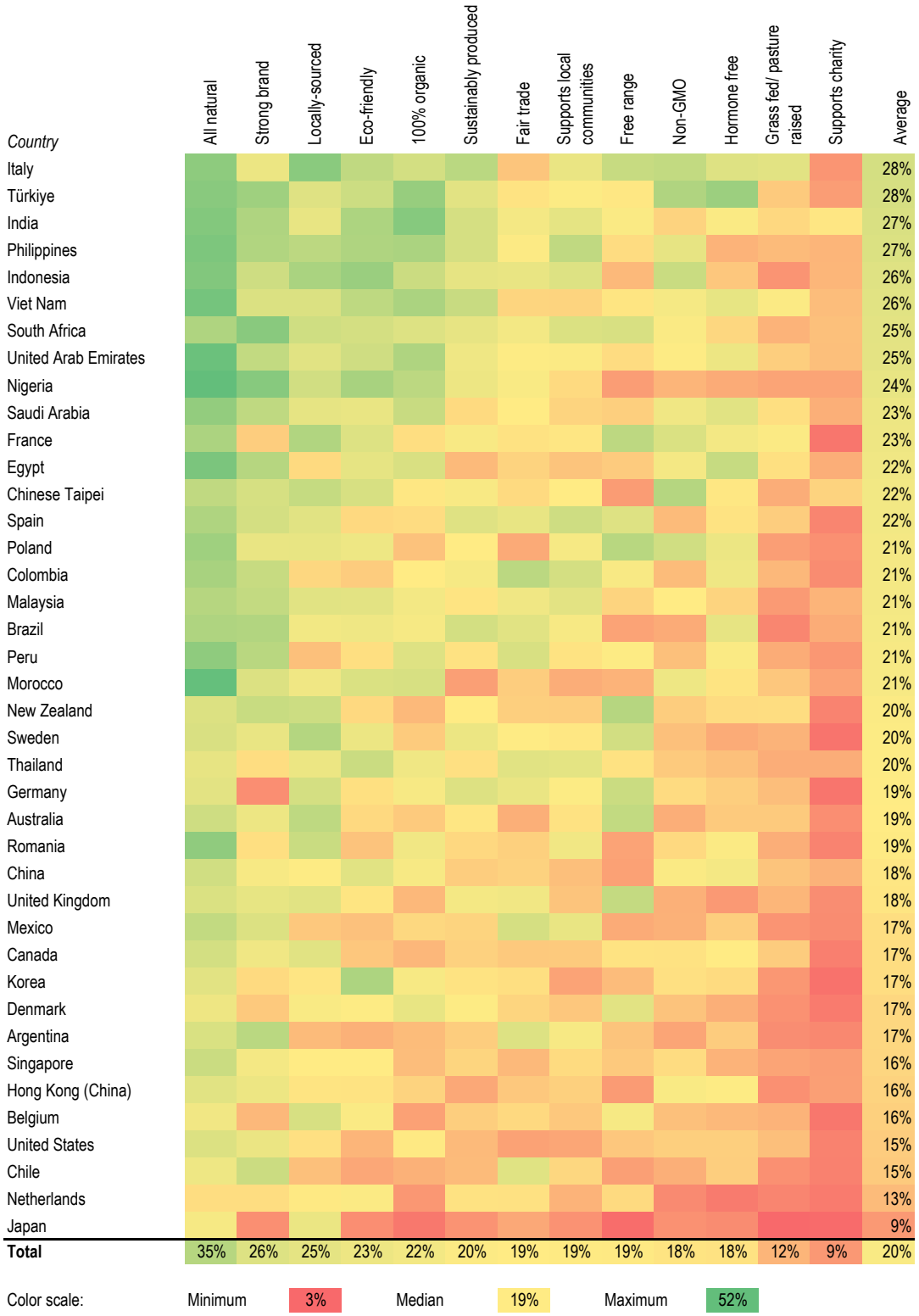
[15] Unfortunately, some reviews of the literature (e.g. Potter et al. (2021[16]), Cook et al. (2023[18])) focus only on the *direction* of an effect (for example, whether claims and labels on average lead to higher willingness to pay), not on the *magnitude* of the effect. This is partly driven by the heterogeneity of study designs, which makes it difficult to compare effect sizes across studies (Potter et al., 2021[16]).

Figure 3.1. Share of respondents reporting a purchase in the last month, by claim



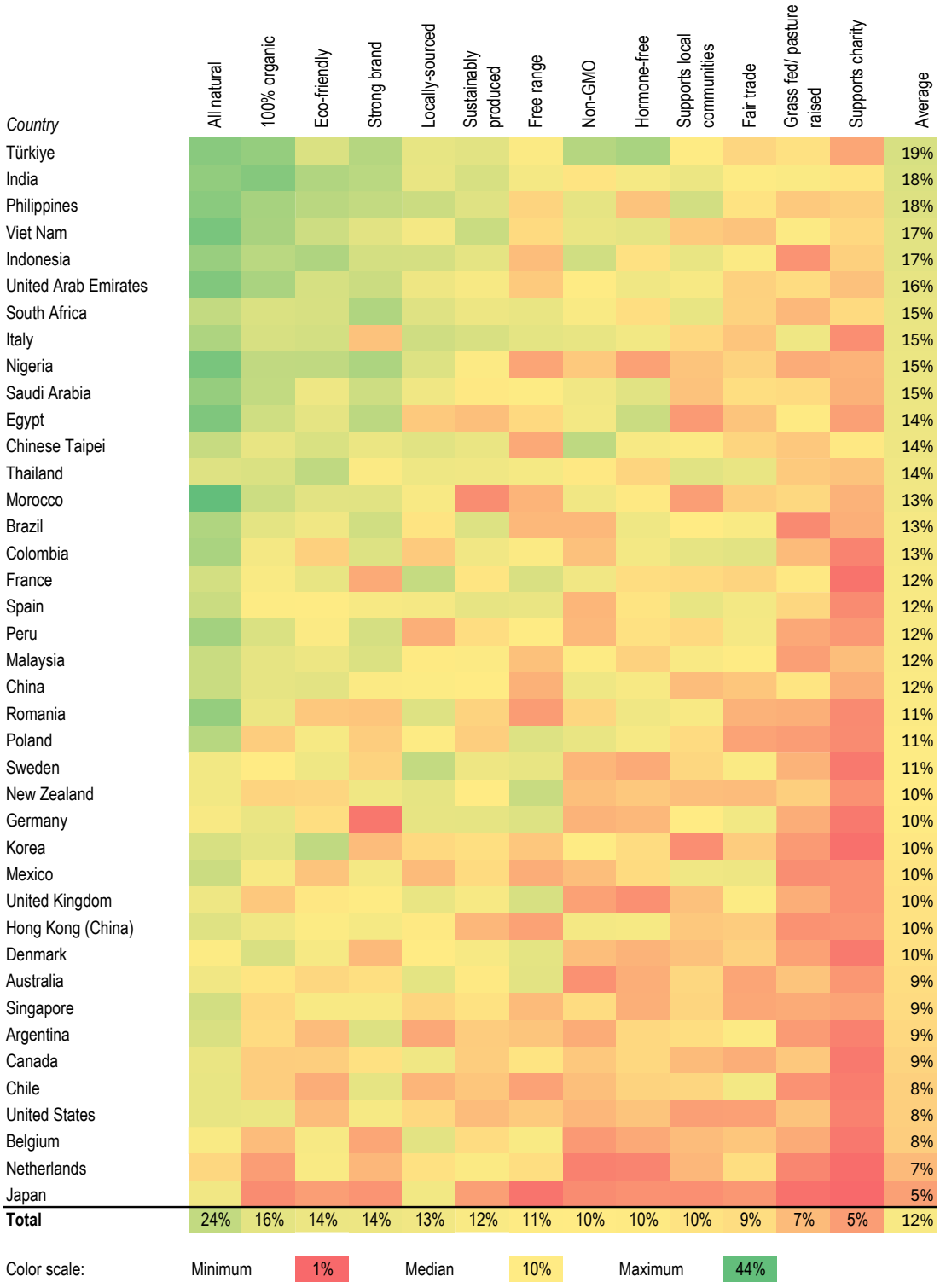
Note: Colours reflect the share of respondents in each country reporting having purchased a product with the corresponding claim in the past month (where red denotes a low share of respondents and green denotes a high share). The minimum, median, and maximum are shown to facilitate interpretation of the colour scale.
Source: OECD analysis of Euromonitor data.

Figure 3.2. Share of respondents reporting looking for claim when buying food



Note: Colours reflect the share of respondents in each country reporting looking for the corresponding claim when purchasing food (where red denotes a low share of respondents and green denotes a high share). The minimum, median, and maximum are shown to facilitate interpretation of the colour scale.
Source: OECD analysis of Euromonitor data.

Figure 3.3. Share of respondents reporting a willingness to pay more for a claim when buying food



Note: Colours reflect the share of respondents in each country reporting a willingness to pay more for a food product with the corresponding claim (where red denotes a low share of respondents and green denotes a high share). The minimum, median, and maximum are shown to facilitate interpretation of the colour scale.
Source: OECD analysis of Euromonitor data.

Box 3.1. The Red Tractor Food Assurance Scheme in the United Kingdom

Red Tractor is a food chain assurance scheme introduced in 2000 to ensure quality standards of food and drink in the United Kingdom. It is the only scheme in the United Kingdom that provides full supply chain traceability and assurance at every stage of the supply chain, from production to retail. Around 50 000 farmers in the United Kingdom are certified according to Red Tractor standards. Major manufacturers, retailers and food services use the certification as a reference for purchasing and sourcing decisions. The total amount of certified food and drink products is valued at GBP 14 billion.1

The scheme is governed by the non-for-profit organisation Red Tractor Food Assurance. The organisation develops standards covering animal welfare, food safety, traceability and environmental protection, based on science, evidence, best practice and governmental legislation. Red Tractor Food Assurance collaborates with over 350 independent inspectors to guarantee robust assessments. The inspectors conduct over 60 000 inspections yearly. In 2020, about 3000 farms did not meet the scheme's requirements and were therefore suspended.

Red Tractor has commissioned research on consumer trust in food in the United Kingdom. This research suggests that since its foundation in 2000, Red Tractor has become one of the most recognised and trusted food assurance schemes in the UK. In 2022, a total of 75% of main shoppers in the UK recognised the Red Tractor logo, compared to 88% for Fairtrade, 79% for British Lion (eggs), 54% for Rainforest Alliance and 42% for RSPCA assured. Among consumers who are aware of the Red Tractor logo, 74% find that the standard is independent and trustworthy, compared to about 30% in 2002 (Kirk-Wilson, 2002[15]).

The creation of the Red Tractor standard stemmed from the food safety crises of the 1990s, notably BSE, salmonella, and foot and mouth diseases, which severely impacted the farming industry. In response to this crisis, numerous assurance schemes emerged in the British agri-food sector, leading to consumer confusion and a loss of trust. In 2000, Red Tractor (initially called British Farms Standards) was created by the British food and farming industry to remedy this situation. Over approximately a decade, Red Tractor consolidated various food assurance schemes in the British market. This allowed the standard to earn recognition and trust from consumers, achieving a significant volume of certified food products on British retail shelves.

One difference between Red Tractor and other assurance schemes is that it simultaneously communicates adherence to food quality standards as well as origin. In the initial stages of the creation of Red Tractor, the goal of communicating British origins was a key element in bringing all stakeholders together.

Initially, Red Tractor focused exclusively on food safety. While food safety is still the core principle of Red Tractor, evolving consumer expectations have been integrated, such as animal welfare and environmental sustainability. Environmental sustainability has been an area of the Red Tractor standard since the beginning, starting with controls of river pollution. The inclusion of carbon footprints started being discussed around 2018. The standards committee is still defining environmental standards for each sector and farming system. However, six key areas have already been defined as guiding principles that can be translated in each individual sector and production system: carbon footprint, managing soils, nutrient management, waste management, water management and biodiversity.

1. Red Tractor, Our Impact and History, https://redtractor.org.uk/about-red-tractor/our-impact-and-history/ (accessed 28 March 2024). Unless noted otherwise, information in this box comes from interviews with Red Tractor.

In an individual country the set of relevant claims, and the ranking among them, may of course differ. In the United Kingdom, Duckworth et al. (2022[21]) found that sustainably sourced and locally sourced claims were more effective than environmentally friendly and low GHG emissions claims. Studying consumers in the Greater Seoul area, Yu-Hsuan and KyungJa (2017[22]) found that organic claims for meat had a greater impact than low-carbon labels. The Euromonitor survey did not ask about emissions claims or carbon labels, but consistent with Duckworth et al. (2022[21]) the Euromonitor data shows that a greater share of UK consumers look for sustainably sourced and locally sourced claims compared with Eco-friendly claims, and are also more willing to pay extra. In some countries, animal welfare claims are more popular, too (Box 3.2).

Box 3.2. Animal welfare claims

The responses in Figure 3.2 and Figure 3.3 show a correlation across the 40 countries in the Euromonitor survey. For example, countries where consumers are willing to pay more for organic products tend also to be willing to pay more for other attributes such as natural or environmentally friendly.

One exception is products labelled *free range*: willingness to pay for free range claims shows little or no correlation with willingness to pay for other claims. As a result, countries with comparable responses for other sustainability claims can have very different responses for *free range*. For example, despite similar responses for willingness to pay for other claims, consumers in Poland are three times as likely to indicate a willingness to pay for *free range* labels compared with consumers in Romania (18% versus 5%), and consumers in the United Kingdom are three times as likely as those in Mexico (19% versus 6%).

Moreover, while consumer interest in *free range* claims is typically lower than in *organic*, *natural*, and *eco-friendly* claims, in some countries this ranking is reversed. In the data in Figure 3.3 this is the case, for example, for Sweden and the United Kingdom. A survey by Ammann et al. (2024[23]) among consumers in the United Kingdom, the Czech Republic, Spain, Sweden, and Switzerland similarly found that consumers value animal welfare information over environmental sustainability when purchasing meat and dairy products, while Van Loo et al. (2014[24]) found similar results for Belgium. (The Czech Republic and Switzerland are not included in the Euromonitor survey; for Spain, Euromonitor data in Figure 3.3 confirms that *Free range* is more popular than *organic* or *eco-friendly*, although less popular than *natural* claims; for Belgium, the Euromonitor data confirms that *Free range* is more popular than *organic*, and equally popular as *natural* or *eco-friendly*). In the Netherlands, the Euromonitor data shows that willingness to pay for *free range* is higher than for *organic*, which is consistent with the findings discussed in Box 2.1.

Several studies find that consumers may use animal welfare claims such as *free range* as an indicator for other product attributes such as quality or safety, especially in the context of growing concerns related to health and environmental risks associated with food scandals in meat production (Banterle, Cereda and Fritz, 2013[25]) (Grunert et al., 2018[26]). Similarly, Bray and Ankeny (2017[27]) found that Australian consumers attribute higher quality, nutrition, safety and taste to *free-range* and *cage-free* eggs compared to caged eggs. As noted earlier, this paper looks at a broad range of claims and labels, including some claims (such as *free range*) which are not necessarily associated with environmental sustainability. While the literature finds that consumers may use animal welfare claims as indicator for other attributes, the low correlation with the other claims in this study could mean that consumers see animal welfare as distinct from environmental sustainability.

The impact of claims may also depend on the country of origin and reputation of producers (although the Euromonitor data does not allow to study this). Lim et al. (2018[28]) studied US consumers' willingness to pay for canned tuna with the Marine Stewardship Council's label, and found that this willingness to pay was higher for non-US tuna. The reputation of individual producers could play a similar role. Lim and Reed (2020[29]) studied consumer willingness to pay for ecolabeled wines in the United States and found that wine from less renowned vineyards particularly benefited from a label, as the label can significantly enhance the perceived quality of wines from these areas.

4. Consumer demographics and consumer segments

Gender, age, education, and income are generally found to be important drivers of intentions to purchase food with sustainability claims (Katt and Meixner, 2020[30]). Demographic factors are studied empirically in section 6 using Euromonitor data.

Some studies have found that it is possible to distinguish different consumer segments. Kaczorowska et al. (2019[31]) examined consumers' willingness to buy and their willingness to pay a premium for food products with sustainability labels in urban areas in Poland. Cluster analysis identified two consumer groups, which the authors identified as Sceptical and Mindful, with differing attitudes and behaviors towards sustainability claims on food products. Gerini et al. (2016[32]) studied Norwegian households' purchasing of organic eggs and identified three segments, namely frequent buyers, occasional buyers, and those who avoid purchasing organic eggs altogether. Similarly, Gorton et al. (2023[33]), in studying British consumers' willingness to pay for chicken meat with an animal welfare label, identified a price-sensitive consumer segment and an ethically concerned segment, each with distinct socio-economic and behavioral traits.

Work undertaken using the food component of the 2022 OECD Environmental Policies and Individual Behaviour Change (EPIC) Survey suggests the existence of three consumer segments – *Price sensitive* consumers who only occasionally purchase products perceived as environmentally responsible and relatively infrequently consume red meat; *Frequent meat purchasers* who consume red meat with the highest frequency among household profiles and infrequently purchases products perceived as environmentally responsible; and the *Environmentally-minded* who have moderate consumption of meat but a high rate of purchase of products perceived as environmentally responsible (Hassett et al., forthcoming[34]). Box 4.1 summarises these findings.

Box 4.1. Consumer segments in the OECD EPIC Survey

Ongoing work by the OECD (Hassett et al., forthcoming[34]) studies the role of socioeconomic characteristics and attitudes in households' food consumption choices using data from the 2022 round of the OECD Survey on Environmental Policies and Individual Behaviour Change (EPIC).[1] The survey covers energy, transport, waste and food across nine OECD countries (Belgium, Canada, France, Israel, The Netherlands, Sweden, Switzerland, United Kingdom, United States).

In the survey, households were asked about their purchasing habits regarding products that are local, organic, use minimal packaging and are in season. It is important to note that although households may associate these attributes with environmental sustainability, products with these characteristics are not always more sustainable than their counterparts. Given the complexity and context-specificity of production methods and impacts, it is therefore difficult to make general statements about the sustainability of any given food characteristic as systematically more sustainable than another. For example, an organic product that is produced internationally and was transported a significant distance before consumption may have a larger overall environmental footprint than a non-organic product that is produced and consumed locally. Similarly, perceptions about local food may differ among respondents, both in terms of the geographic proximity of the food production and its environmental sustainability. While recognizing that characteristics such as *organic*, *locally-produced* and *in season* do not necessarily imply greater sustainability, it is assumed in the paper that insofar as these characteristics are widely perceived to be environmentally sustainable, households that prioritise them can be understood to be environmentally-minded.

Latent class analysis on food purchasing behaviours indicates the presence of three main groups in the sample:

- A first group of households, comprising 24% of the sample, is identified as ***Price sensitive*** based on the fact that they only occasionally purchase products perceived as environmentally responsible (such as locally-grown products, seasonal products, and products with minimum packaging) and relatively infrequently consume red meat.

- A second group of households, comprising 43% of the sample, are characterised as ***Frequent meat purchasers***. This group consumes red meat with the highest frequency among household profiles and infrequently purchases products perceived as environmentally responsible.
- A third group is considered the ***Environmentally-minded*** and comprises the remaining 33% of the sample. In contrast to the previous two groups, this group purchases products perceived as environmentally responsible frequently and while they consume red meat regularly, they do so less frequently than the ***Frequent meat purchasers*** group.

The groups also differ with respect to other dimensions of food consumption behaviour. When asked about what is most important to them in making consumption decisions, both *Price sensitive* consumers and *Frequent meat purchasers* mentioned affordability as main concern, followed by taste, and freshness. These groups are less likely to buy organic or fair-trade certified food compared with the *Environmentally-minded*. The top criteria for the *Environmentally-minded* were freshness, healthiness, and affordability. The *Environmentally-minded* were also less likely to care about whether products are easy to prepare and whether products are perishable.

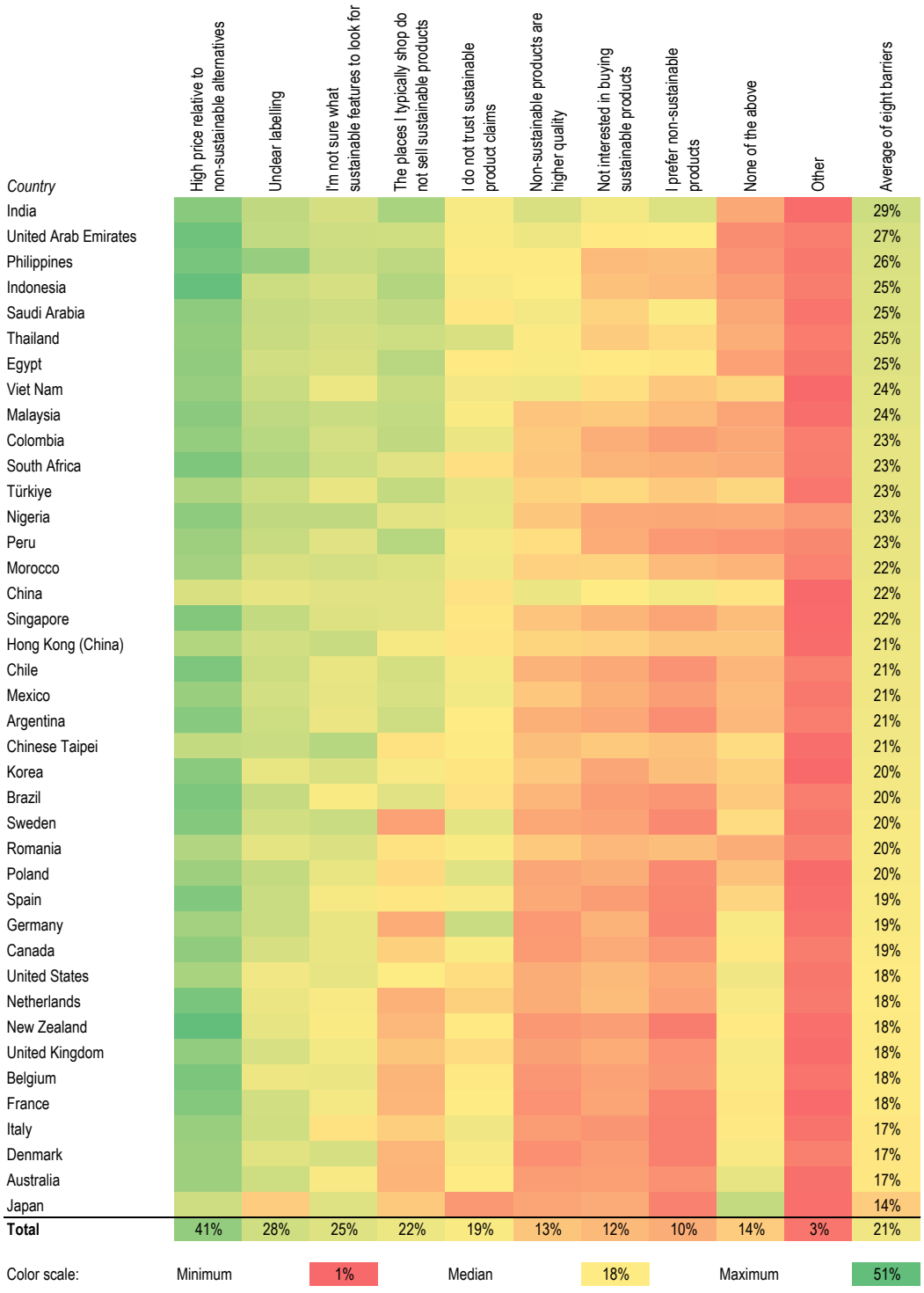
Statistical analysis shows that men with higher incomes but lower education levels, living in rural areas, and showing lower levels of environmental concern are more likely to be *Frequent meat purchasers.* Men who are over 55, with higher education, higher incomes, and higher levels of environmental concern are more likely to fall into the *Environmentally-minded* class.

1. The questionnaire and further information on the implementation of the survey are available in OECD (2023[11]).
Source: Hassett et al., (forthcoming[34]).

5. What are the barriers to more sustainable purchases?

Consumers in the Euromonitor survey were asked to identify the barriers to purchasing products (not limited to food) with sustainable features, among the following: *high price relative to non-sustainable alternatives; the places I typically shop do not sell sustainable products; I'm not sure what sustainable features to look for; unclear labelling; not interested in buying sustainable products; non-sustainable products are higher quality; I prefer non-sustainable products; I do not trust sustainable product claims; other; none of the* above. Figure 5.1 shows the results. By a wide margin, consumers mention price as the main barrier. Unclear labeling, not being sure what sustainability features to look for, a lack of availability in the places where consumers typically shop, and distrust of sustainability claims are some of the other barriers commonly mentioned. Finally, some consumers indicate that they are simply not interested in purchasing sustainable products. The role of some of these factors in influencing food purchases is explored in more detail below.

Figure 5.1. Barriers to more sustainable purchases



Country	High price relative to non-sustainable alternatives	Unclear labelling	I'm not sure what sustainable features to look for	The places I typically shop do not sell sustainable products	I do not trust sustainable product claims	Non-sustainable products are higher quality	Not interested in buying sustainable products	I prefer non-sustainable products	None of the above	Other	Average of eight barriers
India											29%
United Arab Emirates											27%
Philippines											26%
Indonesia											25%
Saudi Arabia											25%
Thailand											25%
Egypt											25%
Viet Nam											24%
Malaysia											24%
Colombia											23%
South Africa											23%
Türkiye											23%
Nigeria											23%
Peru											23%
Morocco											22%
China											22%
Singapore											22%
Hong Kong (China)											21%
Chile											21%
Mexico											21%
Argentina											21%
Chinese Taipei											21%
Korea											20%
Brazil											20%
Sweden											20%
Romania											20%
Poland											20%
Spain											19%
Germany											19%
Canada											19%
United States											18%
Netherlands											18%
New Zealand											18%
United Kingdom											18%
Belgium											18%
France											18%
Italy											17%
Denmark											17%
Australia											17%
Japan											14%
Total	41%	28%	25%	22%	19%	13%	12%	10%	14%	3%	21%

Color scale: Minimum | 1% | Median | 18% | Maximum | 51%

Note: Colours reflect the share of respondents in each country reporting that the corresponding element was a barrier to purchasing products with sustainable features (where red denotes a low share of respondents and green denotes a high share). The minimum, median, and maximum are shown to facilitate interpretation of the colour scale. This question asks about all purchases, not only food.
Source: OECD analysis of Euromonitor *Voice of the Consumer: Sustainability* survey data.

5.1. Affordability

Affordability has been identified as one of the main barriers to consumers when buying sustainable food (BCG, 2023[35]). The 2023 OECD Survey on Environmental Policy and Individual Behaviour Change (EPIC) among consumers in nine OECD countries (Belgium, Canada, France, Israel, the Netherlands, Sweden, Switzerland, the United Kingdom, and the United States) confirms that affordability, along with taste, nutrition and freshness, is more important to consumers than environmental sustainability when choosing food (OECD, 2023[11]). Affordability is the key factor influencing food choices in Canada, with higher prices perceived as a barrier to sustainable diets, according to Canada's Food Price Report 2023 (Charlebois et al., 2022[36]). These findings are consistent with the results from the 2022 EIT Food TrustTracker survey for Canada. The responses suggest that taste, health, and price are more important drivers of food choices than whether a product has a sustainability label. While consumers reported that they care about the environment, and even indicate that they consider it a moral obligation to use environmentally friendly products, they simultaneously report not being willing to pay extra for food with a sustainability label (Deconinck and Hobeika, 2023[10]). In the United States, Lusk and Briggeman (2009[37]) found that the most important food values for consumers were safety, nutrition, taste, and price, with fairness, tradition, and origin valued the least. Research on British consumers similarly finds that price (along with taste and personal health) outweighs sustainability in food choice (Reynolds et al., 2022[38]).

5.2. Confusion and a lack of understanding

The second most commonly cited barrier in the Euromonitor survey is "*unclear labeling*", while the third is "*I'm not sure what sustainability features to look for*". Confusion and a lack of understanding are indeed mentioned in the literature as possible factors limiting more sustainable consumption patterns.

A 2019 survey commissioned by the European consumer organisation BEUC found that European consumers find it challenging to recognise sustainable choices in stores (BEUC, 2020[39]). Other studies confirm a confusion among consumers about the meaning of terms such as *Natural* or *Organic*. In contrast, Grunert et al. (2014[20]) observed that despite limited awareness about sustainability labels, consumers are generally able to make informed guesses about their meaning. Similarly, survey data from Canadian consumers suggests that confusion over labels may not be the most important obstacle to making more sustainable food choices (Deconinck and Hobeika, 2023[10]). Better designed labels may contribute to reducing consumer confusion: sustainability labels based on cues that are intuitively understandable have a larger impact on consumer behaviour, especially when they include visual aids, such as traffic light colours (Cook et al., 2023[18]) (Muller, Lacroix and Ruffieux, 2019[40]).

Beyond labels, a systematic review found that consumers find it challenging to clearly define the concept of "sustainability" and to assess the environmental impact of their food choices (van Bussel et al., 2022[41]). Consumers frequently have a limited comprehension of sustainability information (Cook et al., 2023[18]). For example, a survey by BEUC found that a vast majority of European consumers (69%) believed they understood what "*climate neutral*" meant, yet only 8% accurately grasped that this term does not imply the absence of any GHG emissions (BEUC, 2023[42]). Reynolds et al. (2022[38]), studying perceptions of food sustainability in the United Kingdom, similarly found that British consumers have difficulty defining and understanding the sustainability in food choices, with low overall awareness regarding the environmental impacts of food. In Ireland, a study on public understanding of climate change found that respondents overestimate the importance of buying local (74%) and organic food (58%) for climate mitigation, while two thirds of the population underestimates the impact of shifting to a plant-based diet (ESRI, 2022[43]).

Consumers also often assume that products marketed as more environmentally sustainable are better for their health. Focusing on grass-fed beef in the United States, Lim et al. (2021[44]) find that 40% of survey respondents consider grass-fed beef safer compared with conventional beef, while nearly 50% preferred organic beef for safety reasons. These beliefs translated into a higher willingness to pay. A similar confusion may exist around *Natural* claims (Kuchler, Sweitzer and Chelius, 2023[45]). Such "halo effects" of sustainability labels have been observed in many studies. For example, consumers also believe that products with labels taste better (Asioli, Aschemann-Witzel and Nayga, 2020[46]) (Sörqvist et al., 2015[47]).

Euromonitor data can shed more light on consumer understanding of environmental claims on food products. Two questions in the survey ask consumers how they interpret the *Natural* claim and the *Organic* claim.

The *Natural* claim is primarily interpreted as a product which is “chemical free”, that “does not contain artificial additives” and “does not contain GMOs”. 32% of respondents indicate that natural products are the same as organic products. These are among the most common responses in each country.

Regarding the interpretation of *Organic* claims, the most common answer is that an organic product is “also natural”. Across the 39 countries for which survey data is available, this answer is either the most common or second most common response. Consistent with this interpretation, the next three most common answers echo the descriptions provided for a *Natural* product: that the product is “chemical free”, “does not contain artificial additives” and “does not contain GMOs”.

These results indicate that consumers indeed have only a limited understanding of terms such as *Organic* and *Natural*. They regard these terms as near-synonyms, even though *organic* claims are usually strictly regulated (Box 5.1) while *natural* claims are usually not. In terms of stringency of definitions and requirements, the two claims are on opposite ends of the spectrum, yet consumers do not seem aware of the difference. Many consumers do accurately associate *Organic* claims with production “according to stringent regulations”, but a similar share of respondents think this is the case for *Natural* products.

Box 5.1. Regulating *organic* claims in the United States and the European Union

Organic labels are among the best known sustainability claims on food products. In most countries, organic standards and labels have long been defined through regulations (Rousset et al., 2015[48]).

In the United States, the 1990 Organic Foods Production Act (OFPA) mandated the creation of a uniform national standard for organic foods. The OFPA required the US Department of Agriculture (USDA) to define organic standards. Developing these organic regulations was a collaborative effort involving numerous stakeholders. The final rule was published in 2000, establishing the USDA Agricultural Marketing Service National Organic Program (NOP). The NOP develops and enforces standards for organic products. Private certifiers enforce USDA regulations by inspecting farms annually (at a minimum), conducting compliance inspections, collecting samples, investigating violations on behalf of USDA, issuing noncompliance notices, bringing businesses into full compliance, and suspending or revoking certifications if businesses cannot comply with standards. NOP oversees the certifiers, investigates complaints, and can suspend or revoke certifiers and operations or levy financial penalties based on investigations. However, the proliferation of various competing food labels has led to consumer confusion, particularly in distinguishing the USDA Organic seal from claims like *Natural* or "*raised without antibiotics*." (Kuchler et al., 2017[49]).

In the European Union, too, *organic* claims are strictly regulated.[1] This includes a “Basic Act” setting out main principles as well as a large number of secondary acts providing more specific regulations. The first framework was created in 1991 and revised several times. For example, regulations were expanded from crops only to also include livestock. The framework includes production rules (which cover not only agriculture but also processing, preparation and trade), as well as rules around the organisation of control and certification systems, rules around labelling, and rules defining how EU Member States should organise their own control systems. In addition, there are rules for how producers in non-EU countries can sell their products under the organic label in the EU market.

To organise control and certification of the organic sector, each EU Member State appoints its own competent authority (often the Ministry of Agriculture, or an agency in charge of food standards). Countries can decide between a purely governmental control system (where government agencies are responsible for inspections and certifications) or a model based on recognised private control bodies. The latter model is more common across Europe, and requires private control bodies to be explicitly accredited (by the competent authority) for organic certification.

Control and inspection are regulated by “horizontal” regulations, which cover not just organic certification but also other aspects such as food safety. Controls usually consist of visual observation

of facilities, fields, storage, offices, products in stock, and separation of product, as well as an investigation of records, and sampling. Control happens at least once a year for each producer and uses a risk assessment system, where higher-risk producers get additional controls (including the possibility of unannounced inspections). When these controls are satisfactory, the control body issues a certificate, which is also made publicly available.

The regulatory framework also covers labeling. For certified organic products, the EU organic label is mandatory. However, some Member States have national organic labels, and these can be used in addition to the mandatory EU label. Moreover, in some countries there are private assurance schemes which are based on the organic standard but have additional requirements, and come with their own logo (examples are Naturland, Bioland and Demeter in Germany).

The EU regulatory framework also explains how producers in non-EU countries can access the EU organic label. Until recently, the system relied on equivalence, whereby the European Commission could accept standards or regulations in third countries as equivalent with EU organic regulations. The system is now changing to one based on direct compliance with EU organic regulations. Control bodies in non-EU countries will now need to apply for accreditation, so that they can certify non-EU producers according to the EU regulation. With some countries, however, the EU is currently negotiating mutual recognition of organic systems.

1. The description of the EU organic regulation framework is based on a consultation with IFOAM Organics Europe, the European umbrella organisation for organic food and farming.

5.3. Lack of trust

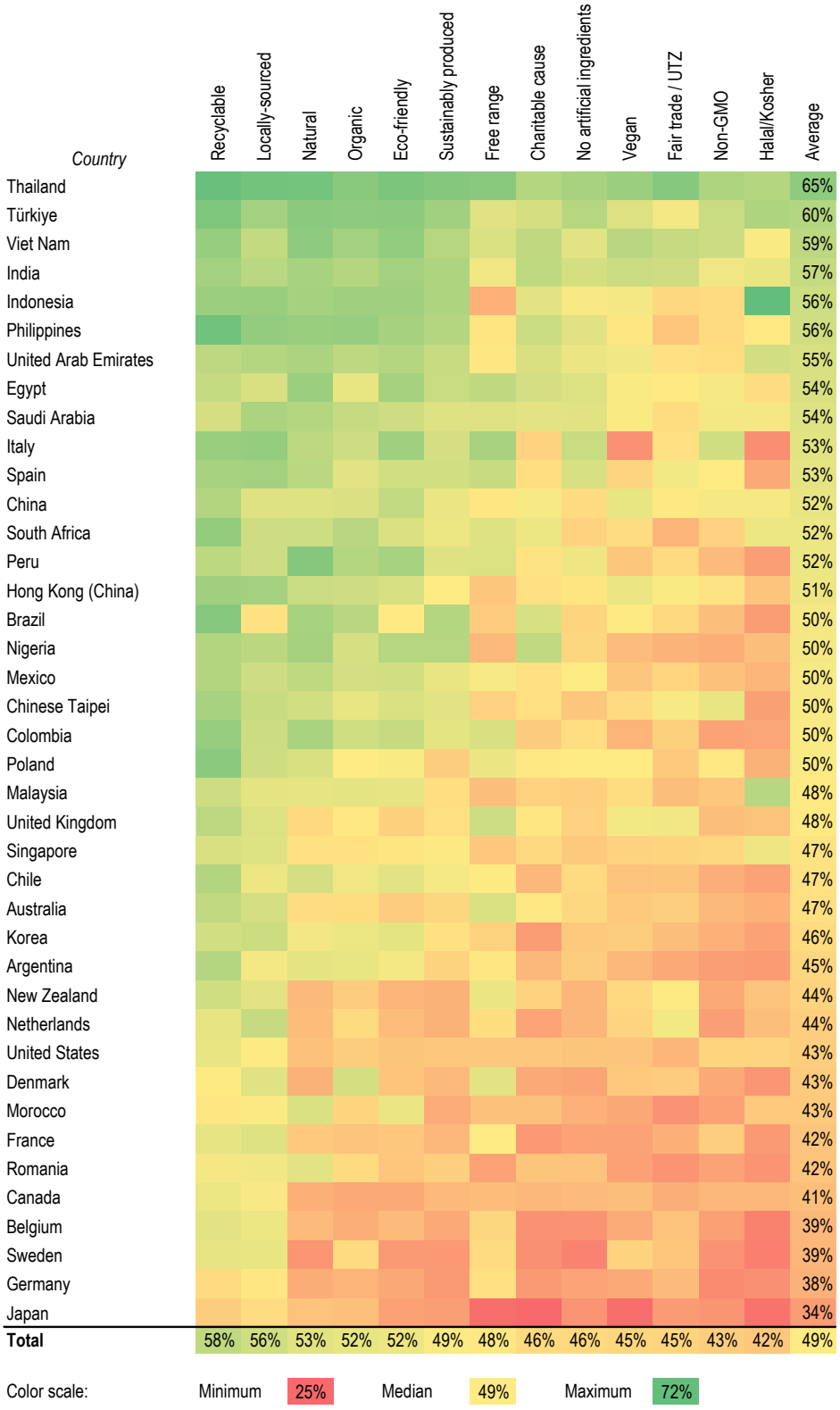
Another barrier mentioned by consumers in Figure 5.1 is a lack of trust in sustainability claims. Other sources confirm the importance of trust. For example, compared to other aspects such as authenticity, health, safety, and taste, European consumers reported the least trust in sustainability claims in 2020. On average 36% of European respondents disagree with the claim that food products are generally produced in a sustainable way (EIT Food, 2022[50]). Misleading green claims and concerns about fraudulent food labelling can reduce trust and discourage consumers from engaging in environmentally friendly behaviour (BEUC, 2023[42]). A consumer survey in Ireland also found that consumers are often skeptical of environmental claims, in particular towards unfamiliar brands (Timmons, Whelan and Kelly, 2023[51]).

However, consumer trust may not always be a barrier. The 2022 EIT Food TrustTracker survey asked Canadian consumers whether they trust that sustainability labels certify products with a lower environmental impact, and whether they find them confusing. On average, consumers neither agreed nor disagreed with both statements. While this suggests that trust and confusion may not be the most important obstacle to higher purchases of products with a sustainability label, it also suggests that consumers are not convinced that sustainability labels are a reliable signal, or they consider that the term sustainability has an ambiguous meaning (Deconinck and Hobeika, 2023[10]).

In the Euromonitor survey, consumers were asked how trustworthy they considered a set of 13 claims/labels: *Natural*; *Organic*; *Free range; Fair trade* or *UTZ (Rainforest Alliance) certified*; *Locally sourced* or *manufactured locally*; *Sustainably produced* or *from a sustainable source*; *Supports a charity or a charitable cause*; *Environmentally conscious* or *eco-friendly*; *Non-GMO* (genetically modified organisms); *Recyclable*; *No artificial ingredients*; *Halal/Kosher*; *Vegan* (free from animal products). Possible answers were: Not trustworthy, Neutral or Trustworthy.

Figure 5.2 shows for each country the share of respondents expressing trust in a particular claim. *Recyclable* and *Local* are the most trusted claims, followed by *Natural* (53%), *Organic* (52%) and *Eco-friendly* (52%). *Non-GMO* (43%) and *Halal/Kosher* (42%) are the least trusted claims. Countries differ strongly in terms of their average trust levels across the 13 claims, ranging from 60% or more in Thailand and Türkiye to less than 40% in Belgium, Sweden, Germany, and Japan. The relative ranking of claims is roughly comparable in each country, with some notable exceptions such as *Halal/Kosher* claims in Indonesia and Malaysia, or vegan claims in Italy.

Figure 5.2. Consumer trust in sustainability claims



Note: Colours reflect the share of respondents in each country indicating they find the corresponding claim "trustworthy" (where red denotes a low share of respondents and green denotes a high share). The minimum, median, and maximum are shown to facilitate interpretation of the colour scale.
Source: OECD analysis of Euromonitor *Voice of the Consumer: Sustainability* survey data

5.4. Broader attitudes and beliefs

Some of the barriers to more sustainable purchases listed in Figure 5.1 relate to consumers' attitudes and beliefs: some consumers are simply not interested in buying sustainable products or even state that they prefer non-sustainable products. This may reflect the influence of broader attitudes and beliefs.

The Euromonitor survey includes a series of questions that help understand attitudes and beliefs towards climate change. Respondents were asked how much they agreed or disagreed with the following statement: *I am worried about climate change; I feel I'm personally contributing to climate change*, and *I try to have a positive impact on the environment through my everyday actions.* For each statement, respondents were asked whether they strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree. Countries differ strongly in their responses. In Japan, on average 34% of consumers agree or strongly agree with the three statements; in India, this figure is 76%. In general, respondents indicate less frequently that they feel a sense of personal responsibility (45% agreed or strongly agreed with this statement, across the 40 countries), relative to how frequently they indicate their concern about climate change (64%) and that they try to have a positive impact on the environment (64%).

Some studies confirm the role of environmental concerns and attitudes. Duckworth et al. (2022[21])'s study of UK consumers found that environmental concern was a key predictor of consumer preferences regarding sustainability claims on food products. Osawe et al. (2023[52]) studied how 1 249 Irish consumers value environmental aspects of beef, chicken, and vegetables, including potential risks related to water quality, carbon footprints, and water use. They found that across food types, consumers prefer products labelled with lower environmental impacts, especially for beef and chicken for which 60% of respondents are willing to pay a price premium. Importantly, rather than socio-demographic factors, the main drivers for this willingness to pay appeared to be consumers' beliefs related to environmental issues.

6. Drivers of willingness to pay: An empirical analysis

The previous two sections discussed several factors influencing whether consumers are willing to make more sustainable purchases. In addition to demographic factors, the literature finds that affordability, confusion and a lack of understanding, a lack of trust, and broader attitudes and beliefs all play a role. The Euromonitor data makes it possible to explore empirically the importance of demographic factors and some of the other factors discussed earlier.

To do this, logistic regression (logit) models are estimated for consumers' stated willingness to pay extra for products with the following claims: organic, natural, environmentally friendly, fair trade, free range, local, and sustainable. Willingness to pay in the Euromonitor data is a binary variable, where a value of 1 indicates that the consumer is willing to pay more. Explanatory variables include socio-demographic characteristics (respondents' gender, age group, presence of children in the household, whether the respondent lives in a small village, a small/medium town or city, or a large city/megacity; whether the respondent has higher education; and the respondent's income level), variables capturing attitudes (whether respondents are worried about climate change and whether respondents try to have a positive impact on the environment through their everyday actions), and variables capturing trust (whether the respondent trusts the specific claim, is neutral, or does not trust it). The selected claims are those for which the Euromonitor survey has information on willingness to pay as well as trust levels.

Each model includes country fixed effects to account for unobservable factors that are common across all respondents in the same country. Table 6.1 shows the marginal effects of the variables on the willingness to pay extra for products featuring sustainability claims, while Table 6.2 shows the corresponding estimates for country fixed effects.

Across the different claims, variables related to trust and to environmental attitudes play an important role. All else equal, consumers who trust a claim or are neutral towards it (rather than distrustful) are more likely to report a willingness to pay more. The same is true for consumers who are worried about climate change or who try to act positively.

The role of socio-demographic variables differs by claim. For example, age seems to play a minor role for organic, environmentally friendly, fair trade, or sustainable claims – but effects are more pronounced for

natural, free range, and especially local claims. The presence of children in the household matters more for organic, sustainable, and natural claims, but less for free range, fair trade, or local. Consumers living in smaller towns or villages are often less keen to pay more, but this pattern is reversed for local claims. The effect of higher education is more pronounced for organic, natural, environmentally friendly, and sustainable claims.

Table 6.1. Marginal effects on willingness to pay for product claims

	Organic		Natural		Env friendly		Fair trade		Free range		Local		Sust.	
Trust in claim	12.0%	***	8.6%	***	8.2%	***	5.2%	***	7.3%	***	7.2%	***	5.9%	***
Neutral towards claim	3.6%	***	2.4%	**	1.8%	**	0.5%		0.8%		1.8%	**	0.8%	
Female respondent (ref.)														
Male respondent	-0.4%		0.1%		-0.1%		0.7%	**	-0.4%		0.5%		0.0%	
15 to 24 years (ref.)														
25 to 34 years	1.2%	*	4.6%	***	-0.2%		-0.7%		1.3%	**	3.2%	***	0.9%	
35 to 44 years	0.3%		5.0%	***	-0.5%		-0.3%		1.6%	***	5.1%	***	0.8%	
45 to 59 years	-1.1%	*	5.0%	***	-0.8%		-0.1%		2.5%	***	6.7%	***	0.5%	
60+ years	-1.3%	*	5.9%	***	-1.1%	*	0.5%		3.5%	***	9.9%	***	2.9%	***
Presence of children	3.4%	***	2.4%	***	1.8%	***	0.7%	*	0.4%		0.7%	*	2.6%	***
Large city (ref.)														
Small or medium town	-0.8%	**	-1.0%	**	-0.3%		0.2%		0.2%		1.0%	**	0.0%	
Small village	-2.4%	***	-1.6%		-1.5%	*	0.3%		-0.2%		2.7%	***	-0.9%	
Low education (ref.)														
High education	3.8%	***	2.8%	***	2.5%	***	0.4%		0.2%		0.8%	*	1.8%	***
Income	0.4%	***	-0.1%		0.3%	***	0.2%	***	0.3%	***	0.3%	***	0.5%	***
Worried about CC	3.7%	***	3.2%	***	7.0%	***	3.5%	***	2.9%	***	3.4%	***	6.3%	***
Tries to act positively	5.8%	***	7.7%	***	8.5%	***	3.3%	***	3.3%	***	5.0%	***	6.8%	***
Country fixed effects	Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Number of observations	37011		37074		36861		35107		36351		37221		36488	
Pseudo R2	9%		7%		9%		4%		7%		6%		8%	

Note: Table shows estimated marginal effects (in percentage points) for willingness to pay for each claim based on logistic regressions on individual-level survey data in 40 countries. Colours represent magnitude of marginal effect. ***, **, * denote statistical significance at the 1%, 5% and 10% level. Country fixed effects are shown in separate table.
Source: OECD analysis of Euromonitor *Voice of the Consumer: Sustainability* survey data.

Table 6.2. Country effects on willingness to pay

	Organic		Natural		Env friendly		Fair trade		Free range		Local		Sust.	
Argentina	-1.5%		2.6%		-4.9%	**	5.9%	***	-3.5%	**	-10.6%	***	-1.0%	
Australia	0.3%		-2.6%		0.2%		-0.4%		4.7%	***	2.1%		2.3%	
Belgium	-2.5%		-6.2%	***	3.2%	*	2.1%		1.0%		1.5%		0.6%	
Brazil	4.7%	**	9.4%	***	4.1%	**	5.6%	***	-4.0%	**	-4.9%	***	6.9%	***
Canada (ref.)														
Chile	-3.6%	*	-2.8%		-6.1%	***	7.0%	***	-6.6%	***	-9.1%	***	-2.2%	
China	2.7%		3.9%	*	4.4%	**	0.5%		-5.9%	***	-4.4%	***	-0.4%	
Colombia	2.0%		9.8%	***	-4.0%	**	9.2%	***	0.4%		-7.2%	***	3.6%	**
Denmark	9.5%	***	-6.2%	***	4.3%	**	3.1%	*	4.7%	***	-4.5%	***	4.2%	***
Egypt	8.1%	***	15.2%	***	3.3%	*	1.3%		-2.2%		-7.1%	***	-4.7%	**
France	3.7%	*	4.5%	**	7.2%	***	3.5%	**	6.2%	***	5.9%	***	1.1%	
Germany	7.3%	***	-5.2%	**	1.5%		7.6%	***	5.7%	***	1.2%		7.8%	***
Hong Kong (China)	2.6%		-0.4%		0.9%		2.4%		-6.8%	***	-4.9%	***	-3.5%	*
India	17.2%	***	12.1%	***	11.3%	***	3.9%	**	1.7%		0.3%		6.4%	***
Indonesia	10.6%	***	11.5%	***	12.0%	***	4.5%	***	-3.4%	**	3.7%	**	4.5%	***
Italy	7.7%	***	8.5%	***	7.6%	***	0.6%		2.3%	*	2.7%	*	6.7%	***
Japan	-9.3%	***	-0.7%		-4.0%	*	-0.8%		-12.3%	***	0.9%		-2.7%	
Korea	6.5%	***	2.6%		12.6%	***	3.2%	**	-3.3%	**	-6.6%	***	0.3%	
Malaysia	5.1%	***	5.0%	**	4.3%	**	5.0%	***	-3.3%	**	-3.1%	*	2.3%	
Mexico	0.2%		3.8%	*	-5.3%	**	8.2%	***	-5.7%	***	-9.1%	***	-0.5%	
Morocco	12.6%	***	22.7%	***	7.0%	***	3.6%	**	-3.1%	*	-1.2%		-7.5%	***
Netherlands	-9.4%	***	-11.4%	***	4.1%	**	3.7%	**	-0.8%		-5.6%	***	3.9%	**
New Zealand	-1.2%		-3.8%	*	-0.1%		1.2%		8.4%	***	1.5%		2.7%	
Nigeria	10.9%	***	17.7%	***	10.8%	***	2.1%		-4.6%	***	4.9%	***	2.2%	
Peru	6.2%	***	10.9%	***	0.0%		6.9%	***	0.5%		-9.0%	***	-0.1%	
Philippines	13.2%	***	14.8%	***	10.2%	***	3.2%	**	-2.1%		5.3%	***	5.6%	***
Poland	-3.7%	*	7.9%	***	2.8%		-1.4%		4.9%	***	-4.5%	***	-1.3%	
Romania	5.3%	***	16.2%	***	-2.3%		1.2%		-6.6%	***	1.9%		-0.3%	
Saudi Arabia	9.8%	***	13.3%	***	2.9%		3.5%	**	0.1%		0.1%		0.1%	
Singapore	-2.9%		3.9%	*	1.9%		-1.3%		-4.0%	**	-6.8%	***	0.2%	
South Africa	6.8%	***	5.5%	***	7.8%	***	3.5%	**	4.3%	***	2.8%	*	4.9%	***
Spain	-0.5%		3.9%	*	0.0%		5.9%	***	2.8%	**	-3.0%	*	4.8%	***
Sweden	2.8%		-2.3%		8.6%	***	6.9%	***	4.3%	***	7.9%	***	8.8%	***
Chinese Taipei	4.8%	**	4.9%	**	7.7%	***	1.5%		-6.5%	***	1.4%		4.2%	***
Thailand	5.5%	***	-2.5%		9.8%	***	6.2%	***	-0.5%		-2.9%	*	1.5%	
Türkiye	15.5%	***	14.1%	***	5.8%	***	2.4%		-0.4%		-0.2%		5.1%	***
United States	6.5%	***	0.4%		-2.3%		-0.6%		-1.4%		-5.4%	***	-2.1%	
United Arab Emirates	11.8%	***	15.2%	***	6.7%	***	2.2%		-3.0%	*	-0.7%		1.2%	
United Kingdom	-2.5%		-2.4%		1.7%		5.6%	***	5.8%	***	1.0%		3.8%	**
Viet Nam	12.5%	***	16.5%	***	7.2%	***	0.1%		-2.5%	*	-2.5%		7.9%	***

Note: Table shows estimated marginal effects (in percentage points) corresponding to the country-specific fixed effects of logistic regressions for willingness to pay for each claim, based on individual-level survey data in 40 countries. Colours represent magnitude of marginal effect. ***, **, * denote statistical significance at the 1%, 5% and 10% level. Source: OECD analysis using Euromonitor *Voice of the Consumer: Sustainability* survey data.

Table 6.2 shows how much country-specific factors affect the estimated probability that consumers are willing to pay more for a given claim, after correcting for the role of attitudes and socio-demographic variables in Table 6.1. The effects are all expressed relative to Canada as reference category.16 Countries such as Viet Nam, Sweden, Italy or India have on average a positive effect (relative to Canada) across the seven claims, indicating a greater willingness to pay, while countries such as Chile, Japan, Argentina, or the United States on average have negative effects. But country effects can differ by claim. For example, compared with Canadian consumers, Danish consumers tend to have a higher willingness to pay for most claims, but not for natural or local claims.

A recurring finding in this paper is the relatively high stated interest in sustainability claims among Indian consumers, and the relatively low stated interest among Japanese consumers (see, for example, Figure 3.2 and Figure 3.3). The statistical analysis in Table 6.2 confirms this. Box 6.1 and Box 6.2 provide some additional information on these two countries.

The statistical analysis in Table 6.1 can be used to estimate the probability that a specific "consumer profile" will be willing to pay more for a particular claim. In turn, this makes it possible to identify the consumer profiles with the lowest and highest estimated probability. For example, for Canada, the estimated probability that a "lowest probability" consumer profile is willing to pay more for organic products is 2%, while it is 24% for the "highest probability" profile.[17] Across the different countries and claims, estimated probabilities for lowest-probability consumer profiles are usually less than 5%, while for the highest-probability consumer profiles they are typically in the 20-40% range. Interestingly, the statistical analysis thus suggests that even "highest probability" consumer profiles have a relatively low probability of being willing to pay more for claims.

Box 6.1. India: High consumer interest in sustainability, but behaviour is lagging

In a survey by the Boston Consulting Group in 2022, Indian consumers report a level of concern for sustainability higher than that in high-income countries such as Germany, the United States, and Japan, although in line with levels of concern in China and Brazil (BCG, 2023[53]). A recent survey conducted by Bain & Company shows that over 60% of Indian consumers indicated willingness to pay extra for sustainable products (Bain & Company, 2023[54]). The study also shows that 52% of urban consumers in India intend to increase their expenditure on eco-friendly brands within the next three years. In addition, in a 2024 Rakuten Insight survey among 30 000 Indian consumers, 60% of respondents said that sustainable product choices are very important to them, and 74% are willing to pay for sustainability (Rakuten Insight, 2024[55]).

While Indian consumers are interested in sustainable products, they do not always translate words into actions by adopting sustainable behaviours or purchasing sustainable products and services across most categories (BCG, 2022[56]). For example, while 60% say that sustainable product choices are important, only 26% chose brands or products with known environmentally sustainable practices and values in the past year (Rakuten Insight, 2024[55]). And while 43% of Indian consumers rank sustainability among their top five purchasing criteria, sustainable products account for only 5% of the market share in packaged foods (Bain & Company, 2023[54]).

Issues such as difficulty in identifying these products, scepticism about sustainability claims, limited understanding of sustainability, high prices, and a scarcity of sustainable options contribute to a high dropout rate, despite consumers' intentions to shop sustainably (Bain & Company, 2023[54]).

[16] Effects of a discrete variable (e.g. gender, country, age group) are expressed relative to a reference category. The choice of the reference category itself is arbitrary and does not affect the results. In the case of country effects, the choice of Canada as reference does not mean that the "Canada effect" is zero – rather, because there is no category corresponding to "no country", the effects of all other countries are expressed relative to Canada.

[17] The lowest-probability and highest-probability consumer profiles are identical across all countries because of the statistical method used here. However, the probabilities of being willing to pay more are different across countries because of the country-specific effects in Table 6.2.

Box 6.2. Japan: Consumers' mixed response to sustainability claims

In line with the Euromonitor data shown here, other surveys suggest that Japanese consumers are less interested in products with sustainability claims relative to peers in other countries. The 2024 Rakuten Insight survey on sustainable consumption in the Asia-Pacific region found that merely 15% of Japanese respondents chose organic or sustainably produced food items in the last year, half as much as in India or Viet Nam and below the average of other countries in the region. Over half of Japanese respondents (54%) claim that sustainable product choices (covering both food and non-food) are not really important or not important at all – a share which is far above that in other countries in the region (Rakuten Insight, 2024[55]).

At the same time, sales of organic food have grown strongly in recent years, with 21% growth between 2017 and 2022, and a growing share of Japanese consumers reporting that they purchase organic foods at least once a week (Willer, Travnicek and Schlatter, 2024[57]). Japanese consumer preference for organic food products is largely based on perceived safety (Sasaki, 2021[58]). Data from the Japanese Ministry of Agriculture, Forestry and Fisheries (MAFF, 2019[59]) also indicate that when Japanese consumers are confronted with higher priced environmentally friendly farming produce, trust in the health and safety of the produce is the primary factor driving their purchase. This does not necessarily mean that Japanese consumers do not care about the environment: 62% of consumers who purchase environmentally friendly agricultural produce value the low environmental impact of those products (MAFF, 2019[59]). In addition, in a Consumer Trend Survey conducted by the Japan Finance Corporation (JFC, 2022[60]), 37% of respondents said they are concerned about whether agricultural products they buy are produced with reduced use of pesticides and chemical fertilisers.

As noted in Box 1.1, studies in the context of the MIDORI Strategy suggest that many consumers would be willing to buy sustainable agricultural products, but may be unsure which products are environmentally friendly. Evidence indicates that Japanese consumers exposed to more detailed information on environmental impact tend to purchase more organic products in certain food categories (Sasaki, 2021[58]) (Yang, Takashino and Fuyuki, 2021[61]). Although further research is needed to understand the gap between consumers' stated intentions and their actual behavior, providing consumers with detailed information about production methods could potentially alter their choices.

7. The role of trust

The results in Table 6.1 show that the willingness to pay more for a claim is strongly influenced by consumers' trust in that claim, even after controlling for a range of other variables as well as unobserved country-specific factors.

The high correlation between *organic* and *natural* claims is a good example. As noted earlier, *organic* claims tend to be highly regulated while *natural* claims typically are not. Yet despite this stark difference, trust levels are broadly similar.

These findings suggest that consumers' responses regarding trust in claims are to a large extent driven by "general" trust, and not just by factors specific to the claims. Additional analysis confirms this. Average trust across the 13 claims has a high correlation with trust in product labels and information shown on packaging (86%), and with trust in government and non-government expert organisations (75%). These findings suggest that actions taken by providers of assurance schemes and sustainability labels (such as tighter standards, stricter audits, or promotion campaigns) may have only a limited impact on consumer trust and hence willingness to pay.

Table 7.1 shows to what extent trust levels are correlated between claims, where 0% would mean no correlation at all, and 100% would mean that the two variables are perfectly correlated. All correlations are positive and most are large, with many above 80%. This means that if consumers in country A indicate they trust e.g. *natural* claims, they are highly likely to also indicate trust in *eco-friendly* claims – and if consumers in country B do not trust *natural* claims, they probably do not trust *eco-friendly* claims either.

The bottom row of the table shows the average correlation between each claim and all other claims: with the exception of *free range* this is always above 50%.

The high correlation between *organic* and *natural* claims is a good example. As noted earlier, *organic* claims tend to be highly regulated while *natural* claims typically are not. Yet despite this stark difference, trust levels are broadly similar.

These findings suggest that consumers' responses regarding trust in claims are to a large extent driven by "general" trust, and not just by factors specific to the claims. Additional analysis confirms this. Average trust across the 13 claims has a high correlation with trust in product labels and information shown on packaging (86%), and with trust in government and non-government expert organisations (75%).[18] These findings suggest that actions taken by providers of assurance schemes and sustainability labels (such as tighter standards, stricter audits, or promotion campaigns) may have only a limited impact on consumer trust and hence willingness to pay.

Table 7.1. Correlation between trust in different claims

	No artificial ingredients	Sustainably produced	Eco-friendly	Charitable cause	Organic	Recyclable	Natural	Non-GMO	Locally sourced	Vegan	Fair trade	Halal/kosher	Free range
No artificial ingr.													
Sust. produced	88%												
Eco-friendly	88%	91%											
Charitable cause	81%	88%	78%										
Organic	79%	88%	87%	77%									
Recyclable	77%	82%	76%	76%	80%								
Natural	86%	91%	94%	80%	85%	76%							
Non-GMO	81%	74%	73%	71%	63%	66%	63%						
Locally sourced	77%	71%	74%	61%	72%	69%	63%	70%					
Vegan	62%	64%	56%	76%	65%	64%	50%	67%	55%				
Fair trade	63%	60%	53%	58%	56%	58%	43%	70%	64%	80%			
Halal/kosher	57%	60%	59%	68%	58%	45%	49%	58%	53%	70%	43%		
Free range	59%	41%	45%	43%	43%	52%	36%	52%	52%	45%	64%	14%	
Average	**73%**	**74%**	**72%**	**70%**	**70%**	**68%**	**66%**	**66%**	**64%**	**63%**	**59%**	**52%**	**44%**

Note: Table shows correlation of average trust levels across the 40 countries (where the trust level corresponds to the share of respondents indicating they trust a claim).
Source: OECD analysis using Euromonitor *Voice of the Consumer: Sustainability* survey data.

[18] Interestingly, this latter variable has a strong negative correlation (-65%) with the Economist Intelligence Unit's Democracy Index: expressed levels of distrust are higher in countries that score higher on the democracy index. One possible interpretation is that citizens in more democratic countries feel more comfortable expressing their distrust. This probably does not mean that the observed trust scores are illusory, however, as it would otherwise be difficult to explain why trust is so strongly correlated with willingness to pay.

8. Conclusion

Changes in consumer behaviour could play an important role in improving the environmental sustainability of food systems, but there are many open questions around consumers' beliefs, attitudes, and behaviours. This paper has tried to shed some light on these issues through an empirical analysis of consumer survey data and other data sources, combined with insights from the broader literature.

Data on the "digital share of shelf" (a measure of how many products in a product category have a certain claim) show that *Organic* and *Natural* are the most popular sustainability claims on food products, although there are some differences between countries: for example, *Natural* claims are more common in predominantly English-speaking countries and *Organic* claims are more common in France. There are differences between product categories too: sustainability claims are more common for sweet spreads, plant-based dairy, breakfast cereals, edible oils, and baby food. The analysis confirms that the prevalence of individual sustainability claims is relatively low, although other studies suggest that market shares of products with such claims are growing.

The consumer survey used here asks which claims consumers look for when buying food, and for which claims they would be willing to pay more. On both questions, consumers are generally more interested in *natural*, *locally produced*, *eco-friendly* (environmentally friendly), and *organic* claims, as well as strong or well-known brands (as perceived by the respondent). There is much less interest in claims around *support to charitable causes* or *grass fed production*.

The literature on consumer behaviour suggests that there are different consumer segments when it comes to food and sustainability. Empirical analysis on the OECD EPIC survey indeed finds three distinct segments*: Price sensitive* consumers (24% of the sample), who relatively infrequently consume red meat and occasionally products perceived as environmentally responsible; *Frequent meat purchasers* (43%) who consume red meat with the highest frequency among household profiles and infrequently purchase products perceived as environmentally responsible; and the *Environmentally-minded* (33%) who frequently purchase products perceived as environmentally responsible but also consume red meat regularly (although less frequently than the *Frequent meat purchasers*) (Hassett et al., forthcoming[34]).

The consumer survey data used in this paper also asks about consumers' perceived barriers to making more sustainable purchases (across all products, not only food). Among the main barriers are affordability (a high price of sustainable products relative to non-sustainable alternatives), confusion (unclear labeling) and a lack of understanding (consumers are not sure what sustainable features to look for), a lack of availability in the places where consumers typically shop, a lack of trust in the claims made on products, and broader attitudes and beliefs (e.g. a lack of interest in sustainable products).

Statistical analysis was used to test the relative importance of demographic factors as well as trust, attitudes, and country differences in explaining consumers' stated willingness to pay more for food products with different sustainability claims. The analysis confirms the strong role of trust and of broader attitudes and beliefs regarding the environment. For most claims, willingness to pay is higher among consumers with higher incomes and education. Age differences were found for some but not all claims, while gender effects are generally quite small. Even after controlling for these factors there are big differences among countries.

A closer look at the role of trust reveals that trust levels are highly correlated between different claims (in many cases 80% or more). This means that trust in different claims is fairly similar within each country: in some countries people are generally distrustful of claims while in other countries people have higher levels of trust across the board. One stark example is the high correlation across the 40 countries of average levels of trust in *organic* claims and trust in *natural* claims (85%), despite the fact that *organic* claims are usually strictly regulated while *natural* claims are usually not regulated at all. These findings suggest that stricter standards, stricter audits or other actions by individual labels/assurance schemes play only a limited role in shaping consumer trust (and hence willingness to pay); trust may be shaped more by general factors in a country. This interpretation is consistent with data suggesting that consumers have only a limited understanding of what different claims mean.

Finally, it is worth noting the limitations of the analysis in this paper. Consumer behaviour with respect to the environmental sustainability of food systems is a broad topic. This paper looked only at consumer

behaviour with respect to claims on products (rather than e.g. food waste or recycling behaviours). The choice of claims studied here is based on their inclusion in available data sources and does not imply an assessment of their effectiveness in improving sustainability. Some of the claims may also be associated with multiple dimensions of sustainability in the minds of consumers, or with perceived health or food safety benefits. The paper did not look at product labels showing quantified environmental impacts, as these are relatively recent and are hence not yet captured in the data sources used here. A general difficulty in evaluating consumer behaviour is that consumers' actual behaviours may be quite different from how they answer survey questions. Much of the analysis here is based on survey data, and hence vulnerable to this problem. There is also the possibility that consumers in different countries understand and answer the same question differently. These limitations should be kept in mind in interpreting the results.

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Annex A. Euromonitor data

The empirical analysis in this paper relies on two main data sources. These are the Euromonitor *Sustainability Claims Tracker* (2022) and the Euromonitor *Voice of the Consumer: Sustainability* survey (2023).

The *Sustainability Claims Tracker* contains information on 61 sustainability claims such as organic, biodegradable, or free range found in 16 food product categories in 25 countries. The data is based on web scraping of products in each country (e.g. from websites of major retailers) and counts stock-keeping units (SKUs), i.e. the number of unique products. This allows a calculation of the share of products in each product category containing a sustainability claim, as measured through retailer websites (an approach known as the "share of digital shelf"). This is not the same as actual market shares (as the data is based on the number of products on offer, not on their sales) but still provides insight on the relative availability of products with different sustainability claims.[19] Since firms generally do not introduce new products (or products with new sustainability claims) without market research, the data does provide indirect evidence on which claims are more popular with consumers, in which product categories, and in which countries.

The Euromonitor *Voice of the Consumer* survey covers 40 691 respondents in 40 different countries. The survey is conducted among online consumers aged 15 and above, and asks about a wide range of sustainability behaviours and attitudes. Samples are representative of their country in terms of age and gender, but not necessarily in terms of other socio-economic characteristics. Especially in countries with lower rates of internet access, this may affect results, as online consumers are more likely to have higher education (and presumably higher incomes). For this reason, findings on levels (e.g. average levels of trust in a claim, willingness to pay, etc) should be interpreted with caution. Findings on correlations (e.g. socio-economic characteristics associated with higher levels of trust in a claim) are probably more robust.[20]

To check possible sampling bias, educational attainment as measured in the Euromonitor Voice of the Consumer survey was compared with internationally available data. While these indicators are not directly comparable (as the Euromonitor survey may not use exactly the same definitions for educational levels), they nonetheless give an indication of whether Euromonitor data is broadly representative in terms of educational attainment. In countries with the lowest coverage of internet, there are large differences in terms of educational attainment between international data sources and the averages computed from the Euromonitor samples. Differences are most striking for Viet Nam, the Philippines, India, Indonesia, China, Mexico, Thailand, Türkiye, Nigeria, and Argentina. In these countries, it is likely that the sample of respondents is better educated (and hence probably also richer) than the population on average. However, it is also noteworthy that in several countries the Euromonitor sample seems to have a lower educational attainment than the population at large. This is the case in the United Kingdom, the United States, Sweden, Japan, France, Australia, and Canada.

Based on these differences in educational attainment, there is a risk that average responses in the sample are not representative of the broader population in those countries. Some additional robustness checks were therefore performed.

[19] The Euromonitor Sustainability Claims Tracker database does record sales values for product with sustainability claims, while other Euromonitor data products have sales value of the overall category, but as these are calculated using different methods they are not directly comparable.

[20] For example, if a sample accidentally includes disproportionately more high-income consumers, the average answer in the survey may not reflect the true average in the population. But again, correlations may be more meaningful: even in this hypothetical skewed sample, statistical analysis would pick up a correlation between income and reported purchases of sustainable products if this correlation actually exists in the population. An analogy can illustrate this point: if there is a correlation between people's shoe size and their height, a statistical analysis might still find this correlation even in a sample of people whose height is above average – although the average height or shoe size in the sample would not be representative of the true averages in the population.

First, for each of the three variables capturing attitudes (concern about climate change; sense of personal responsibility; and willingness to have a positive impact), country averages were compared with estimated country fixed effects of logit models including the full set of socio-economic characteristics. These specifications controlled for the role of socio-economic characteristics such as income and education, i.e. exactly the factors which would be expected to skew the results in the sample away from the true population mean. The estimated country fixed effects correlate almost perfectly with the (uncorrected) country averages. Correcting for the differing socio-economic composition in each country therefore does not meaningfully alter the ranking of average results, which suggests that the role of sample bias may be limited.

As an additional check, some of the analyses were re-run excluding countries with the greatest gaps in education levels between the sample and the nationwide data (difference between sample means and national statistics greater than 30%). More precisely, the following countries were excluded from the sample: Viet Nam, China, India, Indonesia, Mexico, Philippines, Türkiye, Thailand, Italy, Nigeria and Argentina. For all variables, marginal effects estimated using the full sample are essentially identical. This further suggests that the role of sample bias is limited.