

Evolving appetites: an in-depth look at European attitudes towards plant-based eating.

A follow-up to the 2021 survey report, *'What Consumers Want'*

November 2023

www.smartproteinproject.eu



Presenters of today's webinar



Elsa Guadarrama

Consumer Research Manager
at ProVeg International



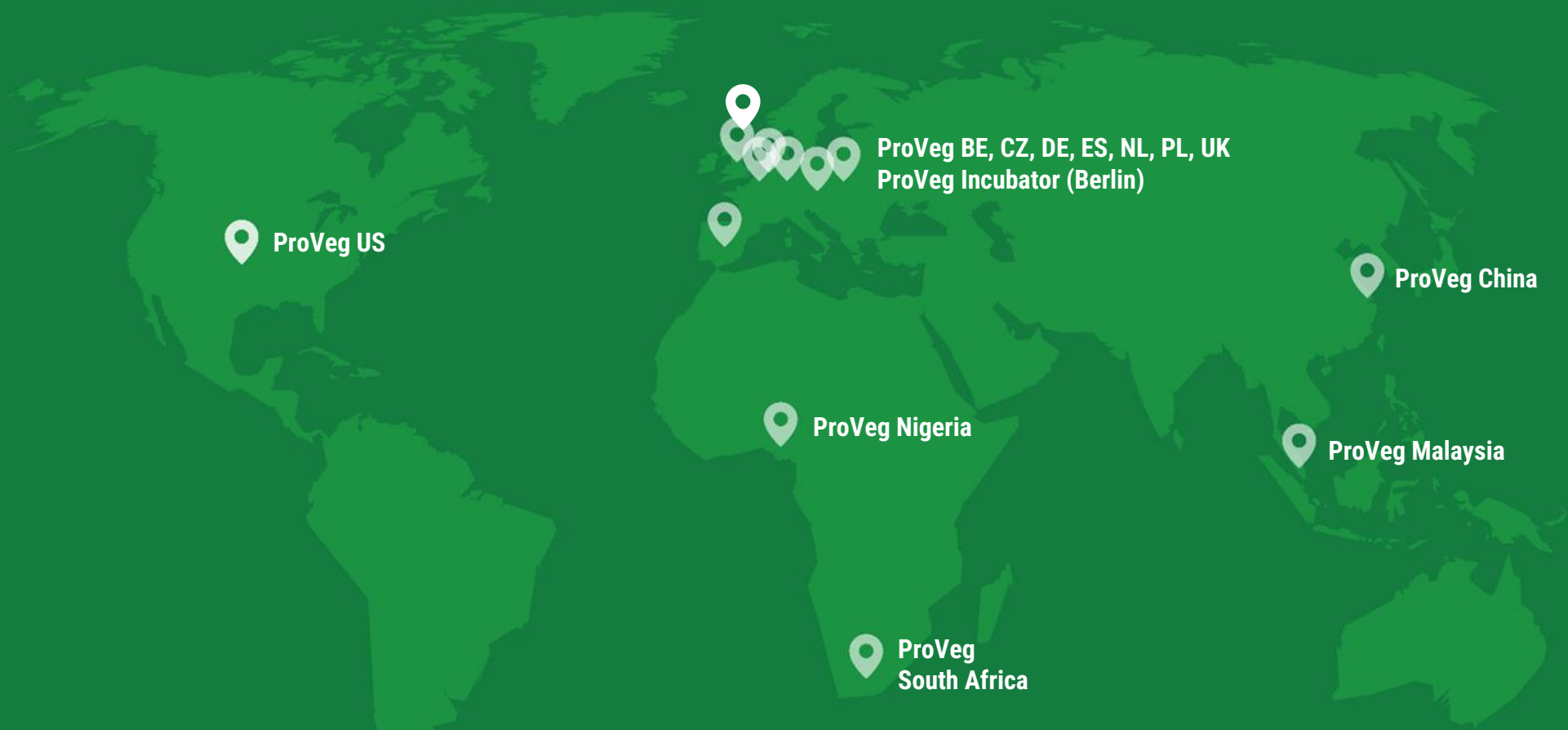
Gemma Tadman

Business and Communication Manager
at ProVeg International

 info@smartproteinproject.eu

Content Overview

- I. **What is ProVeg International & what is the Smart Protein Project?**
- II. **Setting the scene: Current meat consumption outlook**
- III. **European behaviours regarding meat consumption**
- IV. **European behaviours regarding plant-based food consumption**
- V. **European behaviours regarding plant-based alternatives**
- VI. **Conclusions and recommendations**
- VII. **Q&A**



ProVeg International is a food awareness organization working to transform the global food system.

Our Mission: Replace 50% of animal products globally with plant-based and cultivated foods by 2040.



**United Nations Economic and
Social Council (ECOSOC)**

Special Consultative Status

**Intergovernmental
Panel on Climate Change
(IPCC)**

Observer Status



**MOMENTUM
FOR CHANGE**

**United Nations Environment
Assembly (UNEA)**

Accredited Organisation

**United Nations Framework
Convention on Climate Change
(UNFCCC)**

Observer Status

The Smart Protein Project, is a €10 mi. EU-funded Farm to Fork initiative involving 33 partners from over 20 countries.

WP4 – Food nutrition and health



Objectives: Optimisation of the nutritional and biological profile of the Smart Protein food ingredients/foods/beverages plant based products prototyped via human intervention studies.
Key players: Food and beverage industries

WP3 – Food processing



Objectives: Protein-protein interaction, protein functionality, development of food ingredients/foods/beverages plant based products. Formulate protein combinations for partial or full substitution of protein sources traditional utilised. Industrial validation and demonstration of developed food and beverage prototypes.
Key players: Food and beverage industries

WP2 – Plant protein processing and side stream up-cycling



Objectives: Protein extraction validation at the industrial environment, up-cycling side-stream products generates from Smart Protein partners, mycelium, mushroom protein production.
Key players: Food and beverage ingredients companies

WP1 – Protein crop, soil and water management



Objectives: Water management, soil fertility protection, protein crops validation and production strengthening.
Key players: Farmers, farmers support associations, plant breeders

WP5 – Exploitation & business development



Objectives: Assessment of the commercial feasibility and safety of protein channels through its live interaction among the WP1-WP4 – Business case-development
Key players: Farmers/Industries/Food retailers, consumers/support, associations

WP6 – Consumer studies



Objectives: Development and implementation of plant-based food and beverage prototypes to enhance consumer's acceptance, consumer readiness, network and promoting activities.
Key players: Food retailers, consumers/support associations

WP7 – Dissemination and communication



Objectives: Disseminate, exploit and communicate the results of the Smart Protein project within and outside the consortium to the public and relevant professional sectors such as food industry, manufacturing and production, food and regulatory authorities.
Key players: Farmers/Industries/Food retailers, consumers/support, associations, policy makers

WP8 – Sustainability Assessment



Objectives: Environmental impact profiles of protein food covering the whole protein food supply chain (from cradle to grave).
Key players: Farmers/Industries/Food retailers, consumers/support, associations, policy makers

WP9 – Project management and coordination



Objectives: Overall management of the project, establishment of an effective communication infrastructure and foster the integrative process within the consortium, ensure consortium's performance.



Horizon2020
European Union Funding
for Research & Innovation

Research Methodology

20-minute-long
online questionnaire



FW: June 2021 and
June 2023

7,500
EU Respondents
(quotas age and gender)

Austria, Denmark, France,
Germany, Italy, The
Netherlands, Poland,
Romania, Spain, UK

Consumer Survey



Consumer Attitudes	Consumer Behaviors	Market Opportunities	Trust	Opinions on Policy	Social Media
Dietary Lifestyle	Product Familiarity	Drivers	Increase/ decrease of trust	Opinion on what to implement	Social media freq. usage
Motivations	Consumption frequency	Barriers	Trust by statements		Social media - engagement
Food related lifestyles - dimension	Extent of Reduction of meat	Place of purchase	Trust by types		Social media - situations
Food related lifestyles - dimension: PRICE, ORGANIC, TASTE	Intent to replace, consume, purchase	Place of consumption	Media trust		Social media - attitudes
COM-B Model	Consumption frequency	Product expectations			

→ 18+ & only consumers who are responsible for household grocery shopping participated

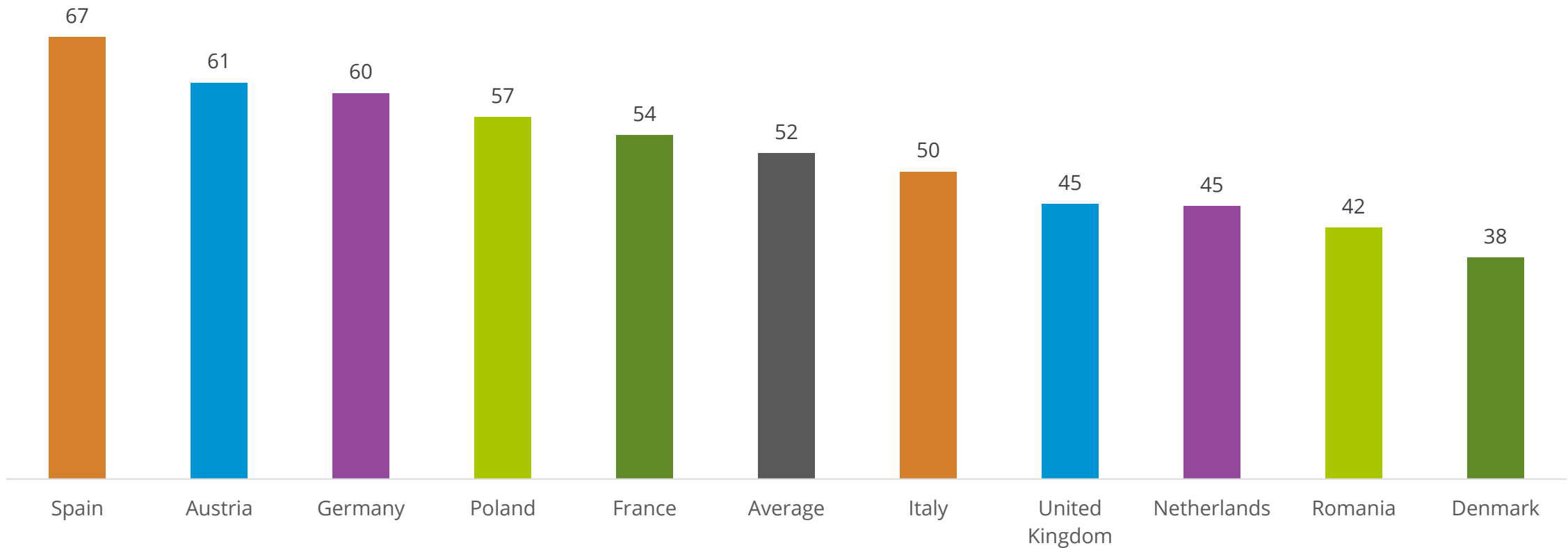
III. European behaviours regarding meat consumption



Spain, Austria and Germany lead the charts in red meat consumption across selected European countries.



Meat consumption by countries included in the Smart Protein Consumer Research (Beef, sheep and pork meat), Kilograms/capita, 2023)



The European commission scenario: A weekly max. intake of red/processed meat of 500 gr. or up to 3 times per week.

European
Commission scenario
500 g per week

Current EU scenario
~700 g per week

Poll: Meat consumption

Compared to a year ago,
how much meat are **you** eating now?



In 2023, 51% of European meat consumers are reducing their annual meat intake, up from 46% in 2021.

Actual meat consumption vs a year ago (%)

	2023	2021
A lot less	15	14
Slightly less	36	32
No change	39	48
Slightly more	7	5
A lot more	2	1

Q8: Compared to a year ago, how much meat (e.g. beef, pork, chicken) are you eating now? | Single choice

Total: n= 6676 | Austria n=639 | Denmark n=649 | France n=682 | Germany n=639 | Italy n=688 | Netherlands n=663 | Poland n=675 | Romania n=695 | Spain n=699 | UK n=650

High meat-consuming countries report the highest annual reductions in meat intake, except for Spain and Poland.

Actual meat consumption vs a year ago (%)

In order of kg of red meat per year*

Total	51
Spain	48 !
Austria	51
Germany	59
Poland	48 !
France	57
Italy	59
UK	48
Netherlands	49
Romania	48
Denmark	47

Prioritize educational campaigns in Spain and Poland aimed at reducing meat consumption.

*Source: Meat Consumption by Country 2023, World Population Review. <https://worldpopulationreview.com/country-rankings/meat-consumption-by-country>

Q8: Compared to a year ago, how much meat (e.g. beef, pork, chicken) are you eating now? | Single choice

Beef and pork consumption has substantially declined, while dairy products show only a minor reduction

Decrease of food consumption (%) – Total sample

	2023
Beef	35%
Pork	31%
Fish	7%
Poultry	6%
Milk	6%
Cheese	5%
Eggs	4%
Yoghurt	3%
I don't know	3%

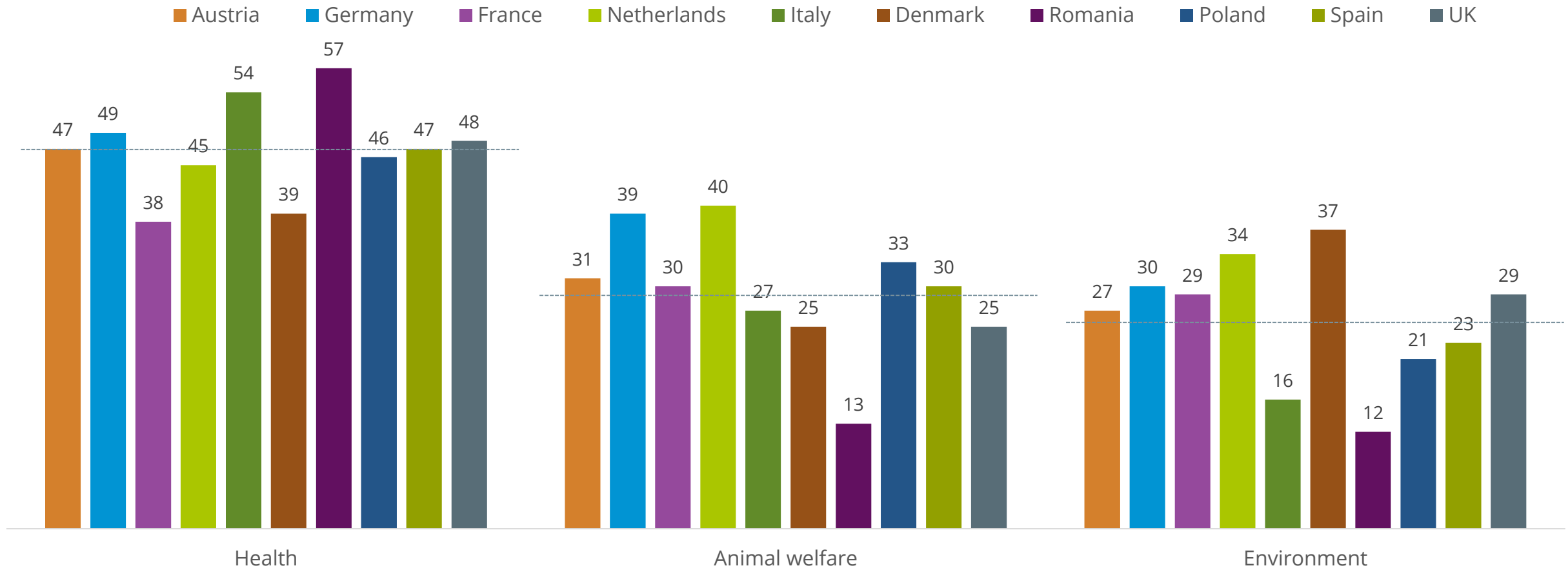
Health is the primary reason to reduce meat consumption, followed by animal welfare and the environment.

Reasons for decrease of meat/dairy consumption (%)

Health	47
Animal welfare	29
Environment	26
Taste	15
Concerns over antibiotics	15
Other	12
My social environment	10
Major outbreaks of animal-to-human diseases (e.g. COVID-19)	9

Reasons to decrease meat consumption vary across countries.

Top 3 reasons for decrease of meat/dairy consumption (%) – by country



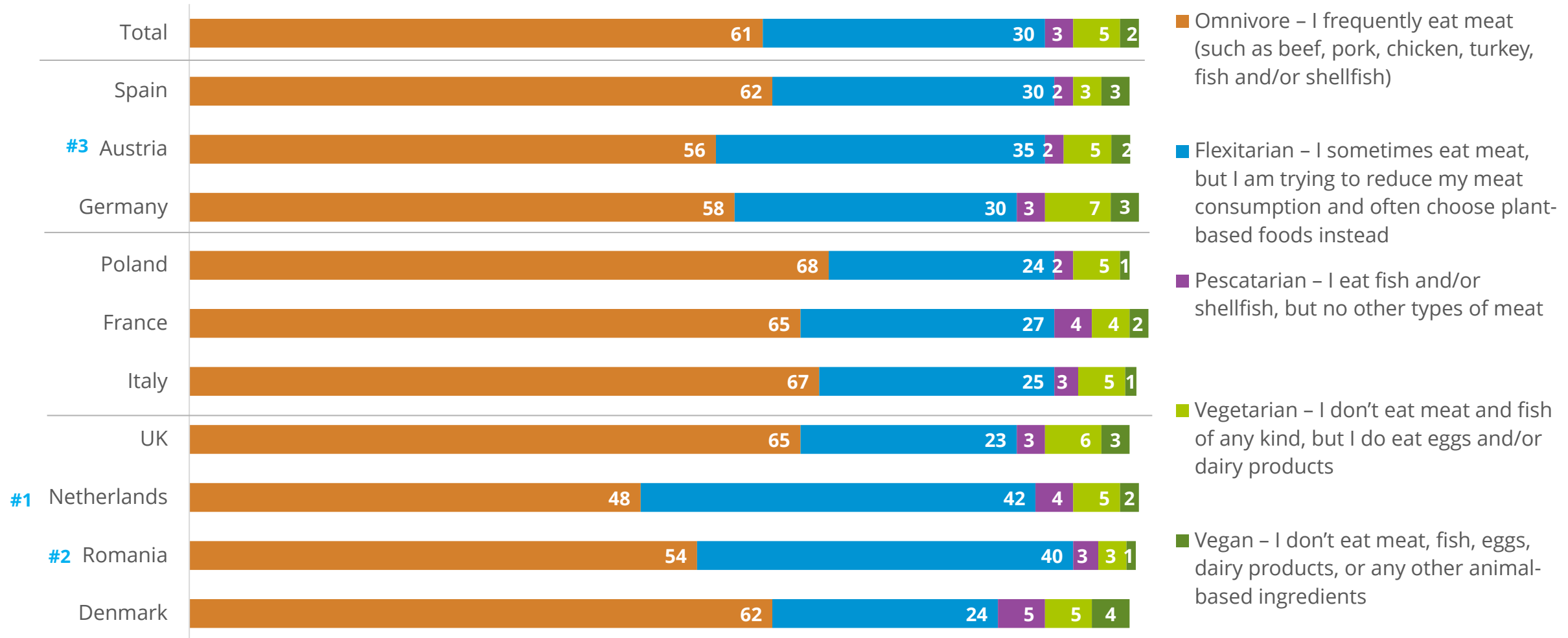
Q10: Which of the following reasons best describe why you have chosen to decrease your consumption of meat or dairy products? | Multiple choice

IV. European behaviours regarding plant-based food consumption



In 2021, 39% of Europeans were following a non-meat based dietary lifestyle with NL, RO and AT leading the way.

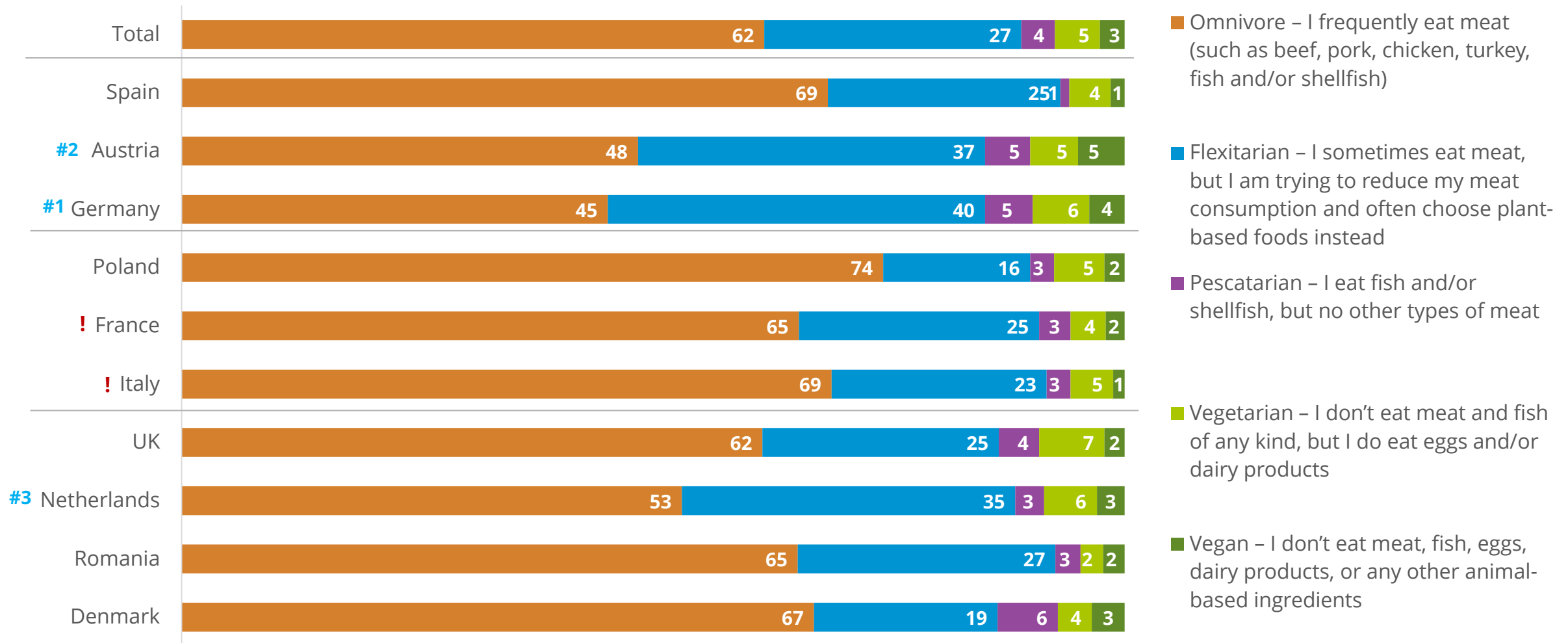
Dietary lifestyle by country (%) 2021



Q3: Which category best describes your current dietary lifestyle? | Single selection

In 2023, 38% continue to follow a non-meat based dietary lifestyle, now with DE, AT and NL leading the way.

Dietary lifestyle by country (%) 2023



Q3: Which category best describes your current dietary lifestyle? | Single selection

Interest in *flexitarianism* transcends generations and genders.

Dietary lifestyle by age and gender (%)

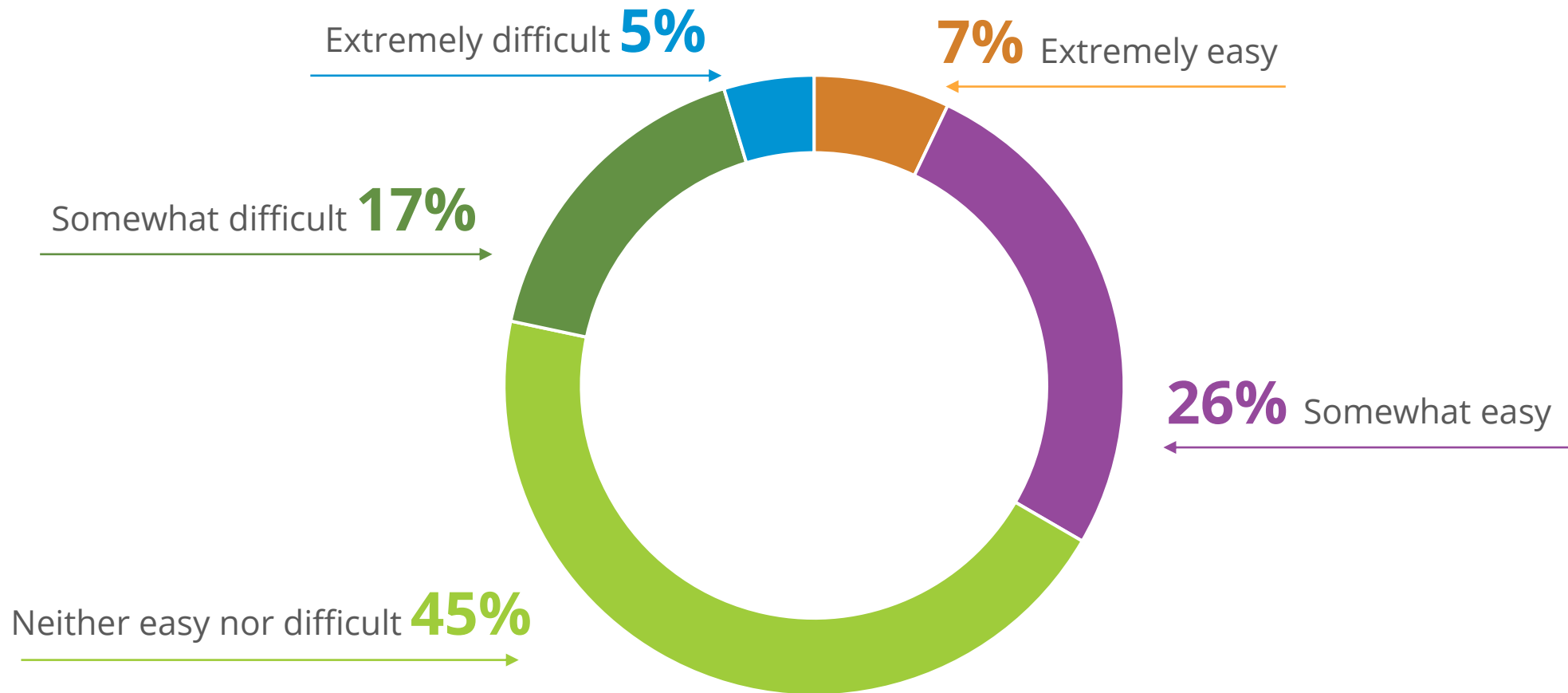
	Boomers (1946- 1964)	Gen X (1965-1980)	Millennials (1981-1996)	Gen Z (1997-2012)	Female	Male	Diverse**
Flexitarians	29%	27%	28%	26%	31%	23%	43%
Omnivores	64%	64%	61%	58%	58%	66%	26%
Pescatarian	3%	3%	3%	5%	3%	4%	4%
Vegetarian	1%	2%	3%	4%	2%	3%	13%
Vegan	3%	4%	5%	7%	6%	3%	13%
Total	100%	100%	100%	100%	100%	100%	100%

Market plant-based foods that appeal to the needs of everyone.

**Sample size below 30 and it is showed only for reference

45% of European flexitarians have **neither an easy nor difficult financial situation.**

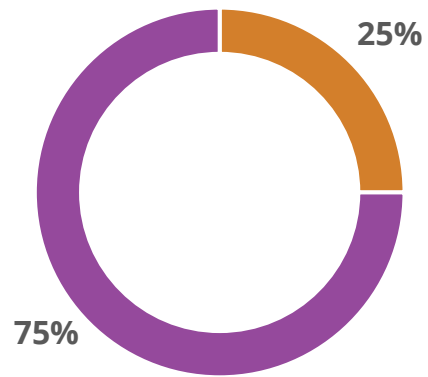
Financial situation - Total Flexitarians



In addition, **they are usually living with other people, but not kids, in the city,** and have at least a vocational training.

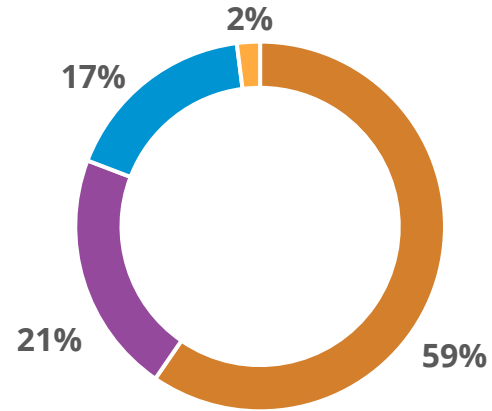
Socioeconomic situation - Total Flexitarians

Housing situation



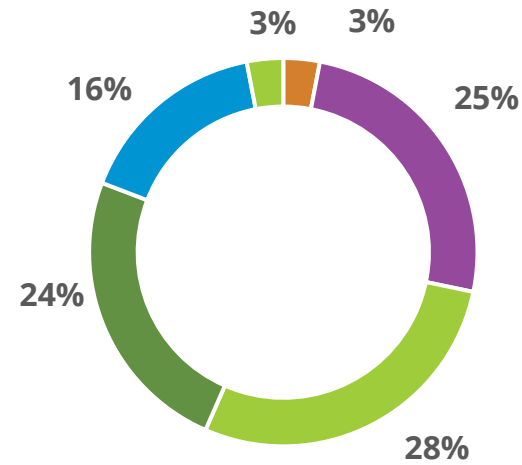
■ I live alone ■ I live with other people

Has kids



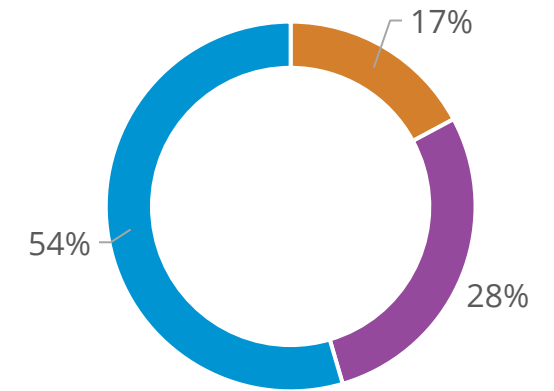
■ 0 ■ 1 ■ 2-3 ■ 4+

Education



■ Some school, no diploma
 ■ Secondary school graduate, diploma
 ■ Vocational training
 ■ Bachelor's degree
 ■ Masters degree
 ■ Doctorate degree

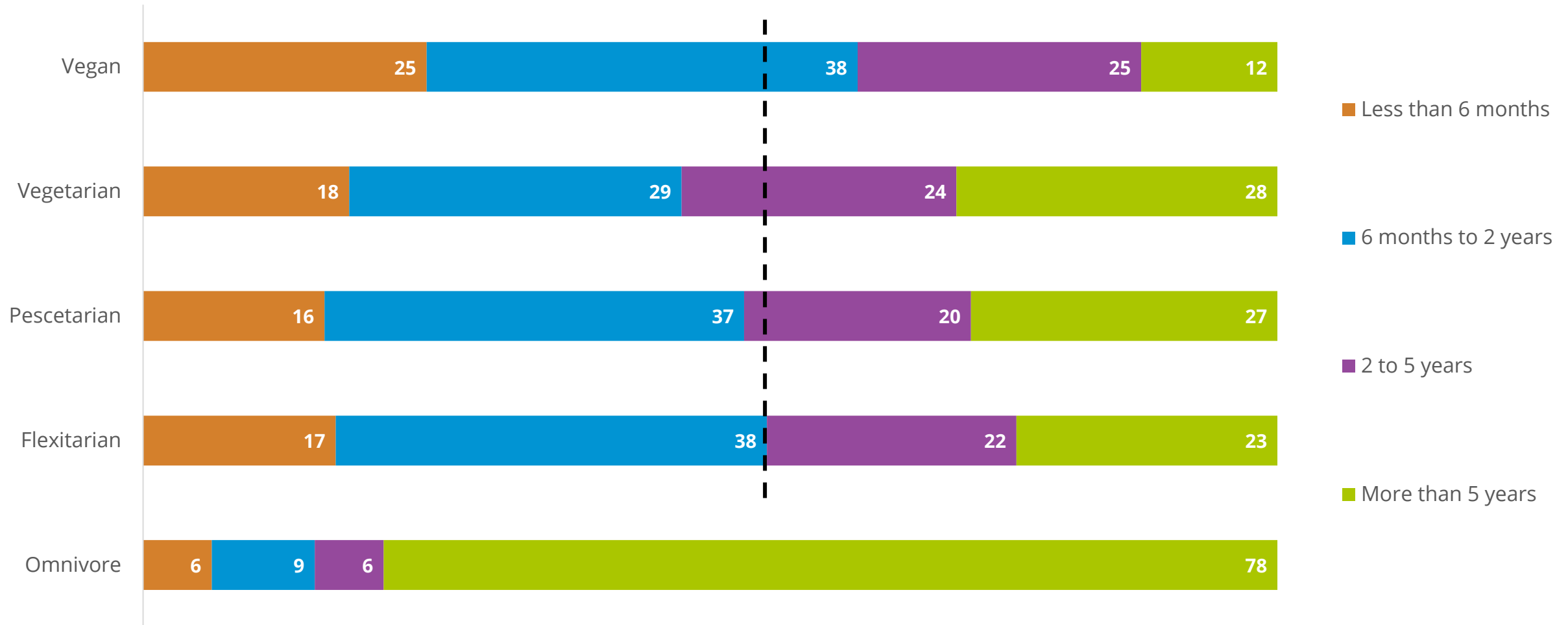
Living Place



■ Rural ■ Suburban ■ Urban

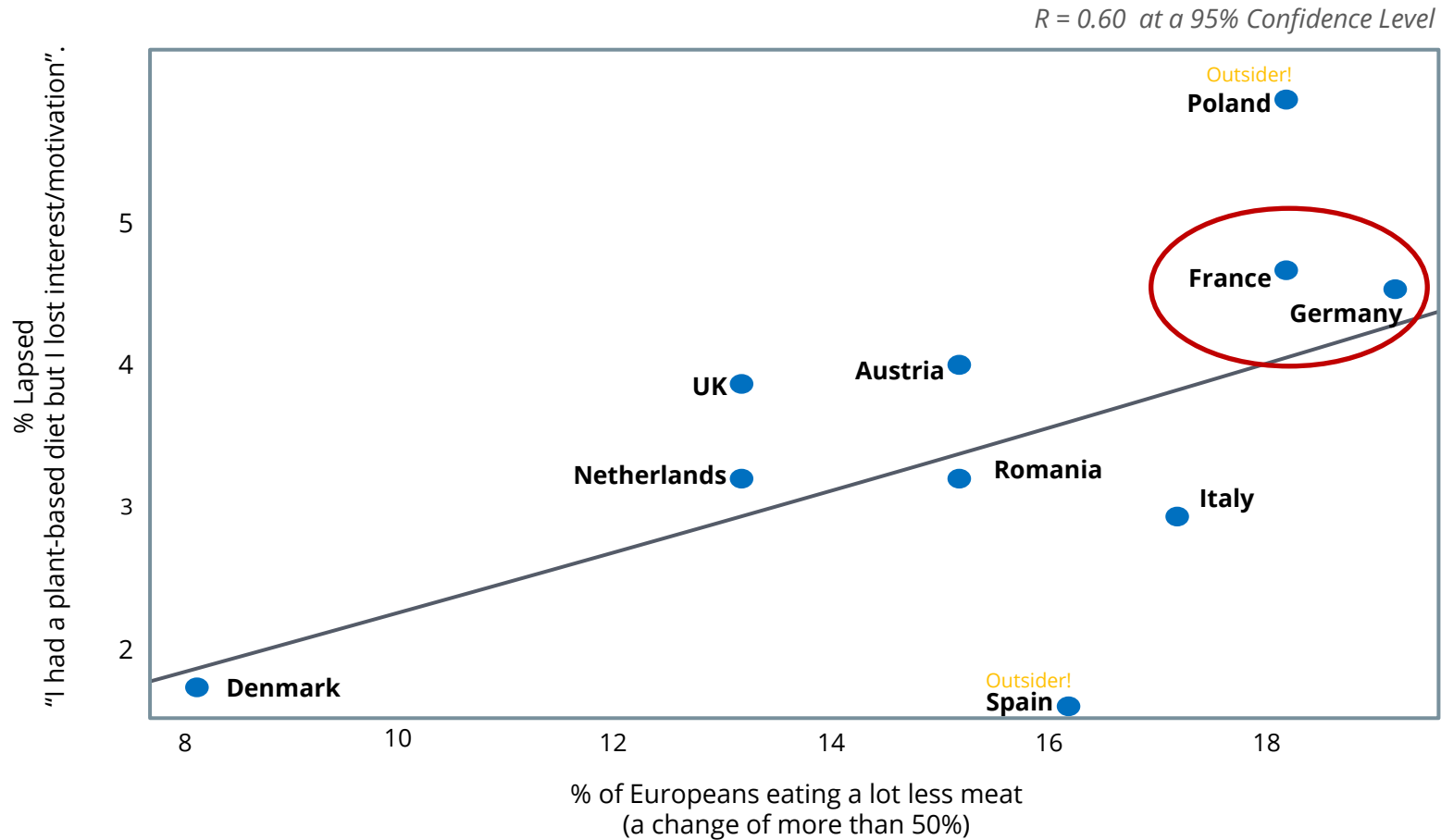
On average, 45% of European consumers have been flexitarian+ for more than two years.

Dietary lifestyle length Total (%)



Q4: How long have you been following your current dietary lifestyle? | Single choice

However, if Europeans change too much, they might experience a higher likelihood to end their plant-based dietary lifestyle.



A gradual change is key to secure long-term plant-based adoption!

Please note that the presented correlation analyses in this study aim to identify potential relationships between variables. While significant correlations may suggest associations, they do not necessarily imply causation. Additional factors and complexities that influence the observed patterns might need further analysis.

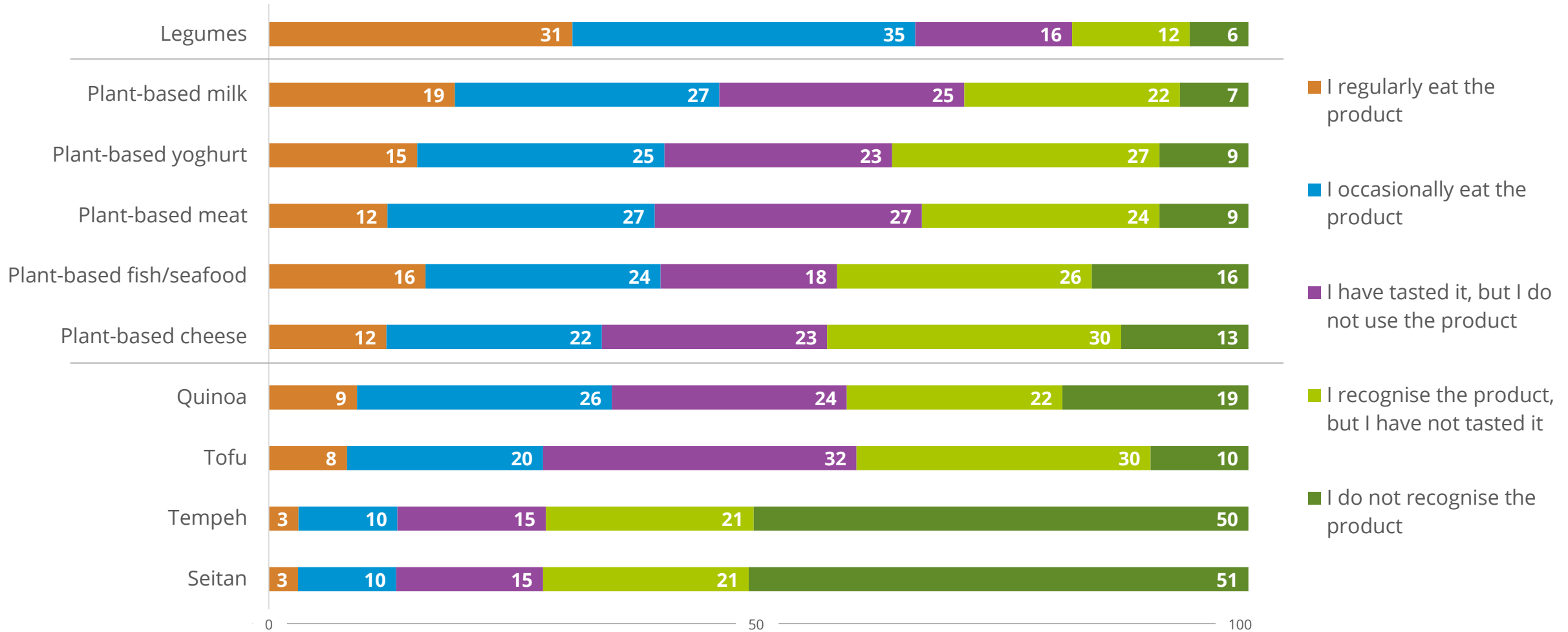
Q4: How long have you been following your current dietary lifestyle? | Single choice | Q5: Which of the following phrases best describes your current dietary habits or situation? | Single choice | Q8: Compared to a year ago, how much meat (e.g. beef, pork, chicken) are you eating now? | Single choice

Total: n= 7500 | Austria n=750 | Denmark n=750 | France n=750 | Germany n=750 | Italy n=750 | Netherlands n=750 | Poland n=750 | Romania n=750 | Spain n=750 | UK n=750

Legumes are eaten the most often, followed by plant-based dairy. Seitan and tempeh are the least familiar foods.



Familiarity with plant-based products total sample (%)

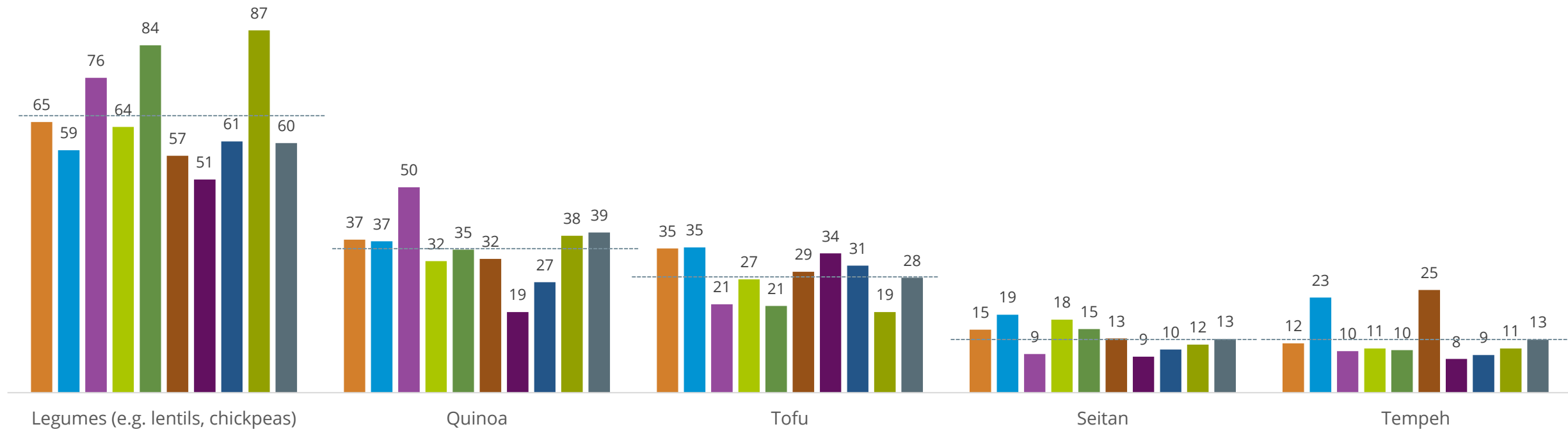


Q6: How familiar are you with the following food products? | Single choice

Consumers in SP and IT lead in legume consumption, while DK and NL in adopting less mainstream foods.

Familiarity with plant-based products by country (%) – Regular and occasional consumption

■ Austria
 ■ Denmark
 ■ France
 ■ Germany
 ■ Italy
 ■ Netherlands
 ■ Poland
 ■ Romania
 ■ Spain
 ■ UK



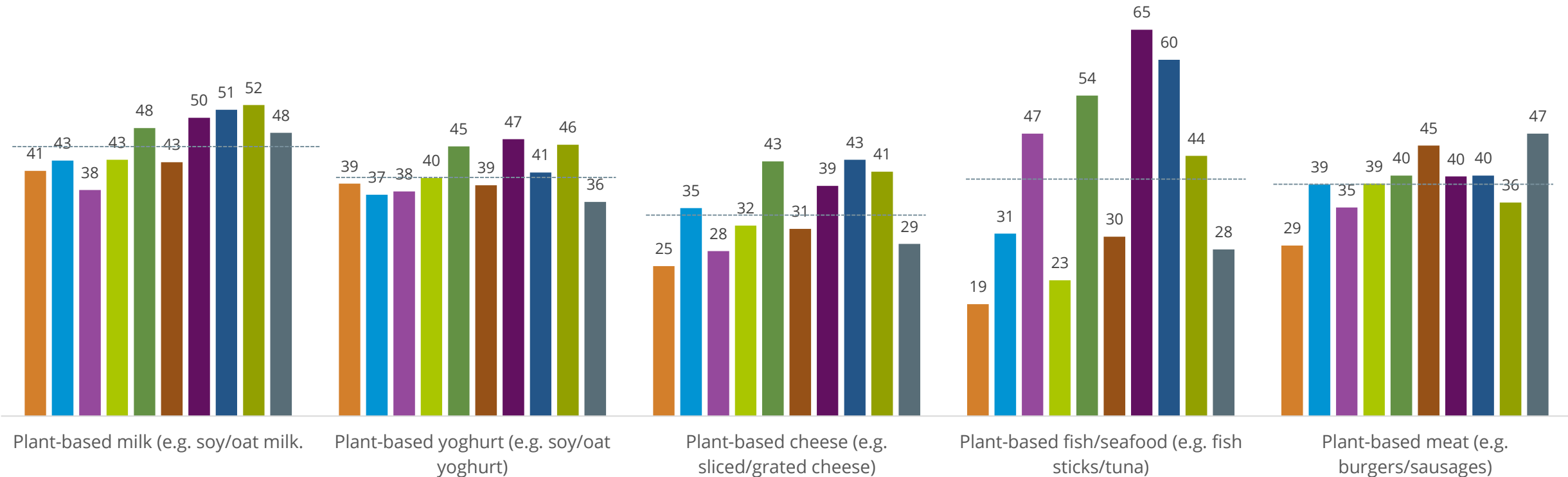
Average ----

Q6: How familiar are you with the following food products?| Single choice

PL, RO, SP and IT demonstrate the highest acceptance of various plant-based alternatives.

Familiarity with plant-based products by country (%) – Regular and occasional consumption

Legend: Austria (orange), Denmark (blue), France (purple), Germany (light green), Italy (green), Netherlands (brown), Poland (dark purple), Romania (dark blue), Spain (yellow-green), UK (grey)



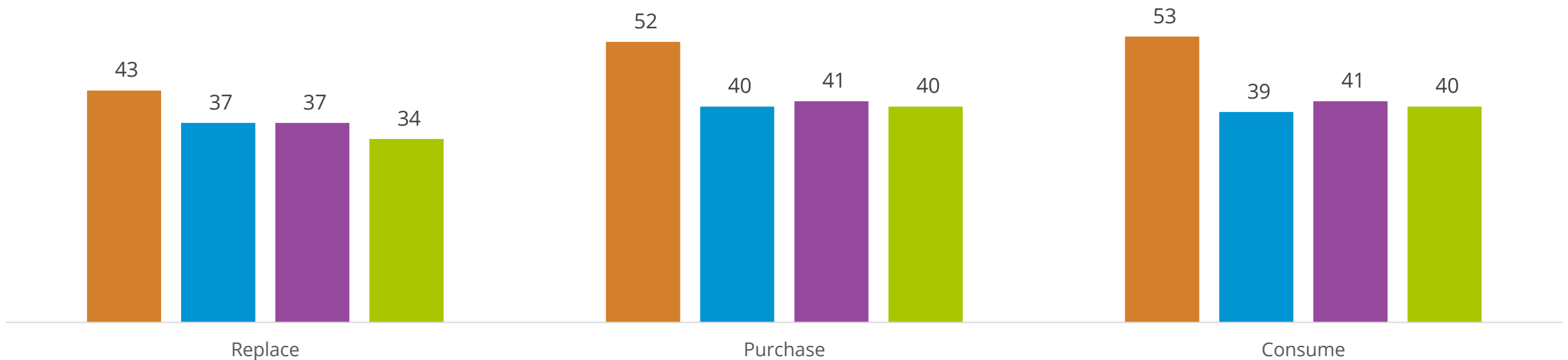
Average ----

Q6: How familiar are you with the following food products? | Single choice

Looking into the future, **European consumers want more.**

Intention to replace, consume and purchase more in the next 6 months (%) - Total sample

- Legumes (e.g. chickpeas, lentils)
- Legume-based foods (e.g. tofu, tempeh, hummus)
- Plant-based dairy alternatives
- Plant-based meat alternatives

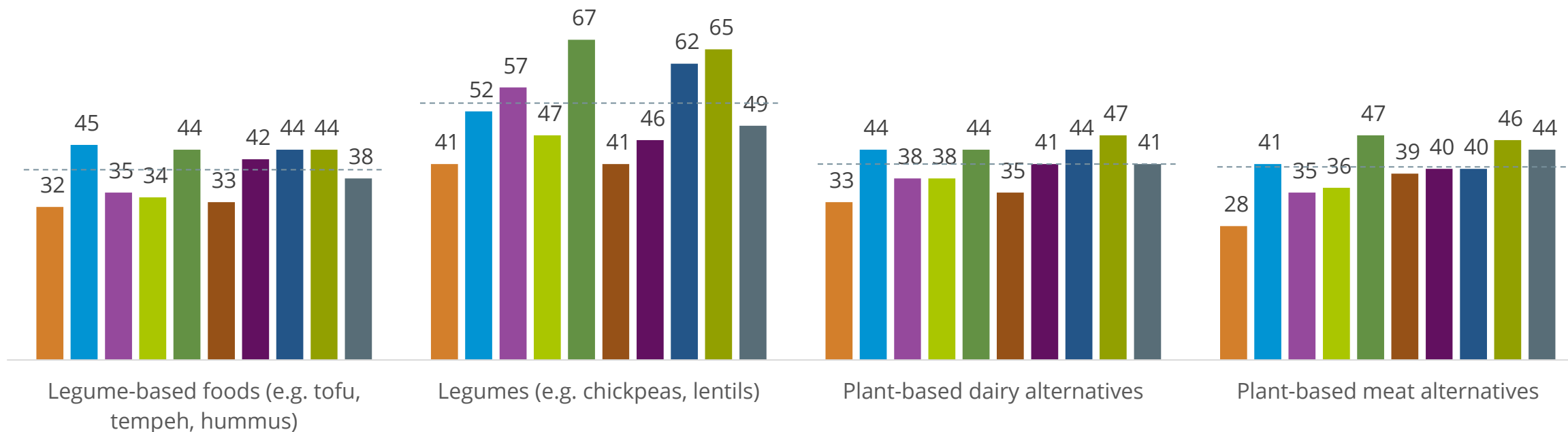


Q11: Please indicate your agreement to the following statements. I intent to replace animal-based foods in my diet by eating more... in the next 6 months | Single choice | Sum of 'Strongly agree' + 'Agree' + 'Somewhat agree'

IT and SP show the highest drive to consume more plant-based foods, in particular legumes.

Intent to consume more ... in the next 6 months by country (%)

■ Austria
 ■ Denmark
 ■ France
 ■ Germany
 ■ Italy
 ■ Netherlands
 ■ Poland
 ■ Romania
 ■ Spain
 ■ UK

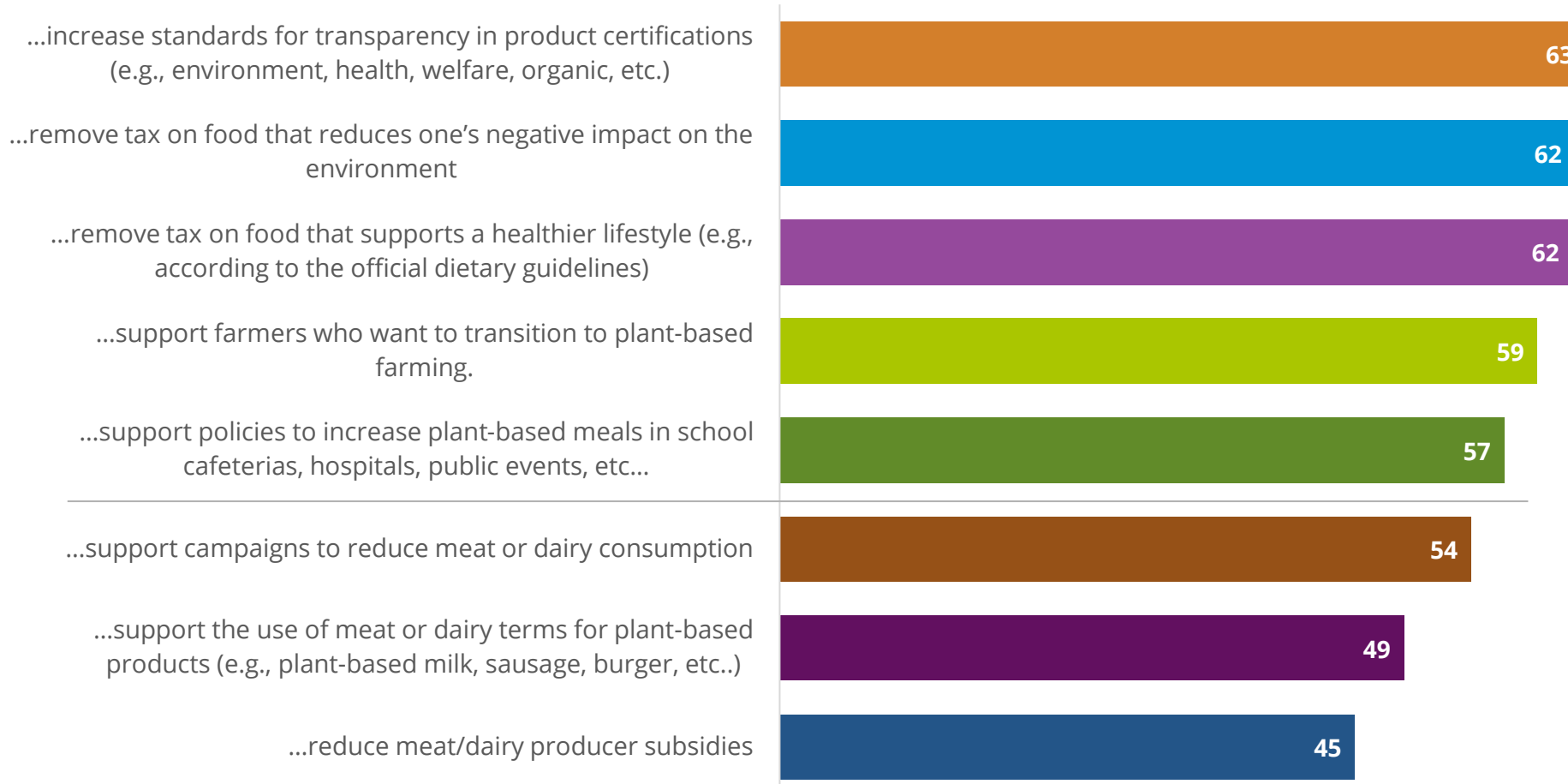


Average ----

Q12: Please indicate your agreement to the following statements. I intend to consume more ... in the next 6 months. | Single choice

However, many Europeans seek greater government support to facilitate their transition to plant-based diets.

Total agreement regarding actions required from policymakers total sample (%)



Countries where plant-based lifestyles are less prevalent, (e.g., Spain, Italy), depend more on government support to adopt change.

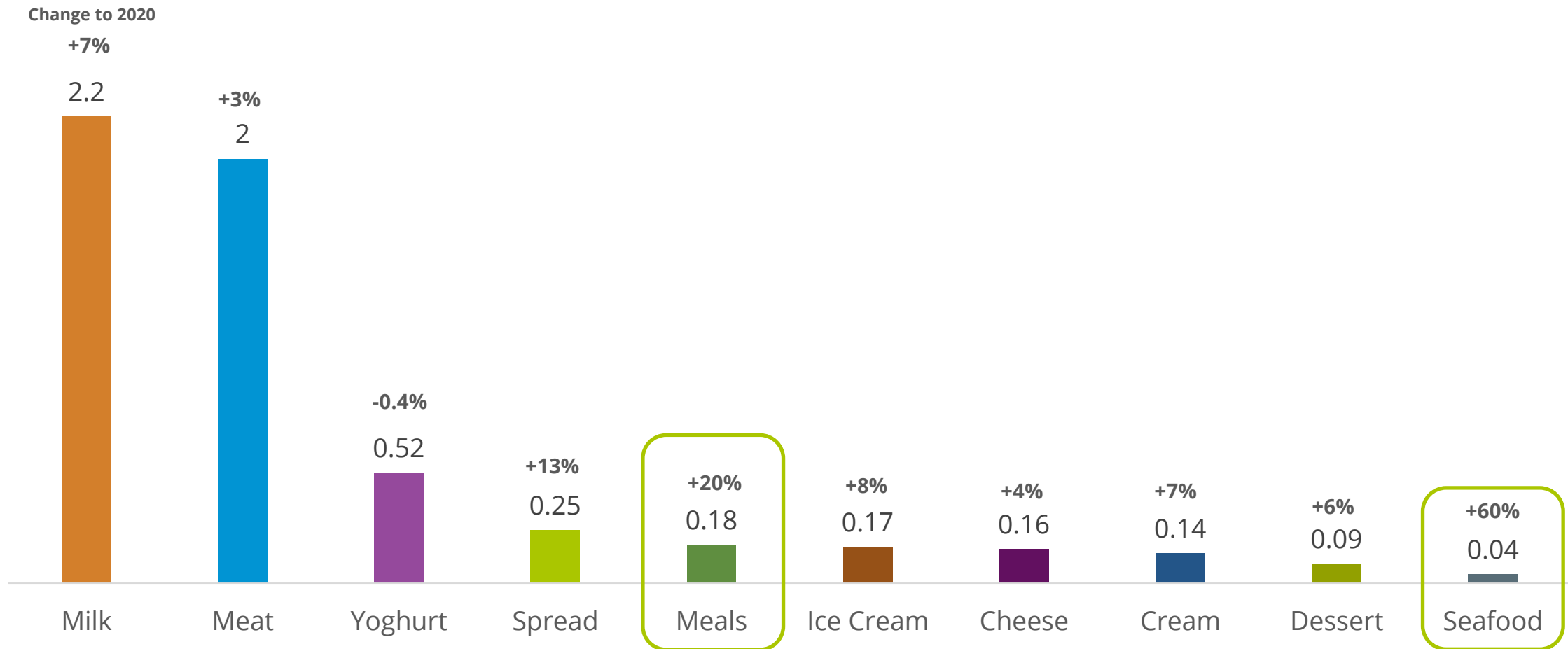


V. European behaviours regarding plant-based alternatives



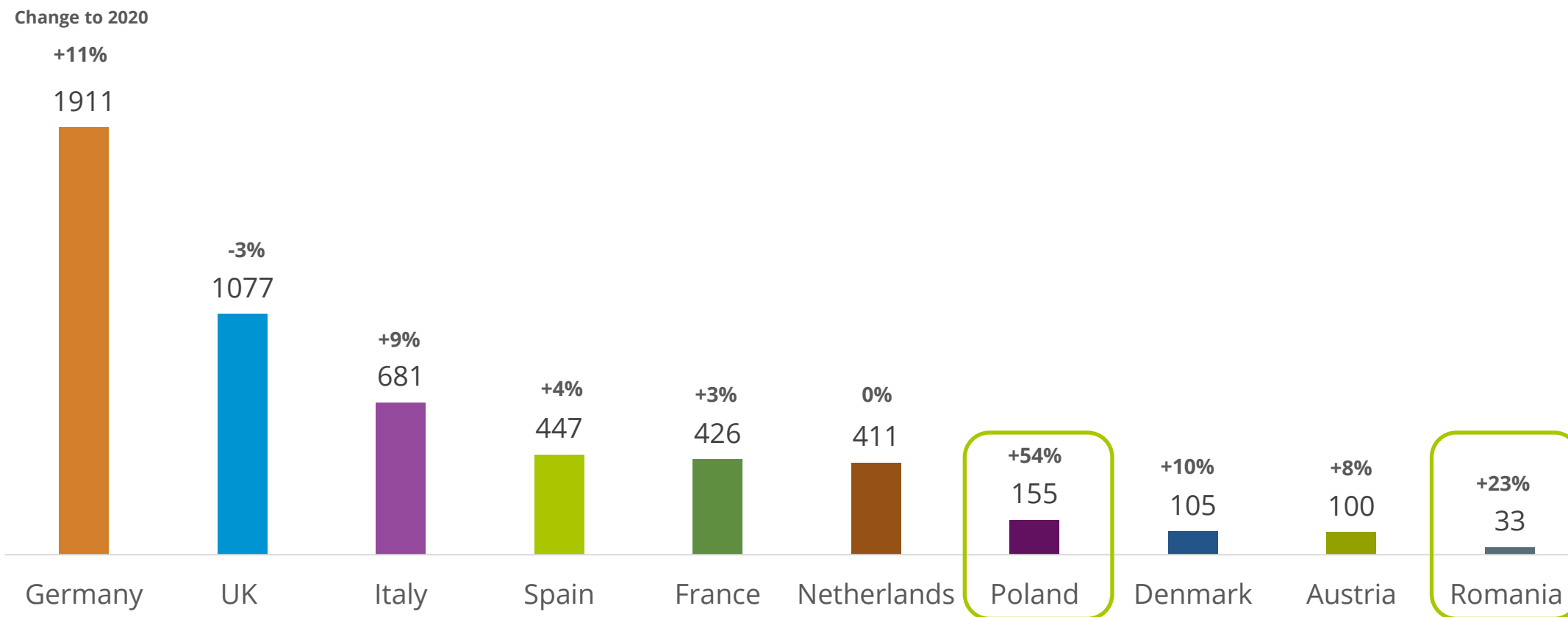
Plant-based milk is the most developed category. Plant-based meals shows the highest annual growth.

Europe-wide plant-based food sales by country (in EUR millions), 2022 and 2020



Sales of plant-based foods in Europe have grown 6% in 2022 – and 21% since 2020 – to reach €5.8 billion.

Europe-wide plant-based food sales by country (in EUR millions), 2022 and 2020

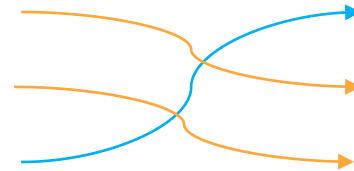


Taste, health and price are the most important factors to consumers when choosing plant-based alternatives.

Factors for choosing plant-based food alternatives total sample (%)

Top 5 factors when choosing a plant-based alternative 2021

#1 Tasty
#2 Healthy
#3 Fresh
#4 Has no additives/artificial ingredients
#5 Affordable



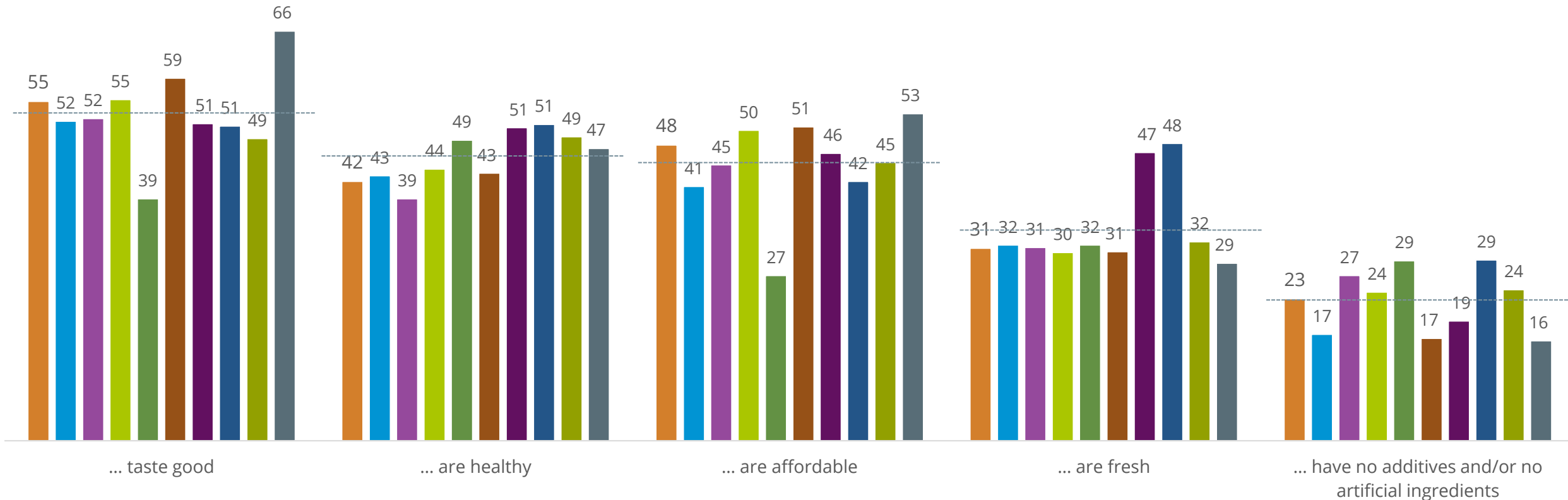
Top 5 factors when choosing a plant-based alternative 2023

#1 Tasty
#2 Healthy
#3 Affordable caution!
#4 Fresh
#5 Has no additives/artificial ingredients

For UK consumers, taste and affordability are more important. For consumers in PL And RO, freshness is key.

Factors for choosing plant-based food alternatives by country (%)

■ Austria
 ■ Denmark
 ■ France
 ■ Germany
 ■ Italy
 ■ Netherlands
 ■ Poland
 ■ Romania
 ■ Spain
 ■ UK



Average ----

Q14: What are the most important factors when choosing plant-based food alternatives? It is important to me that the plant-based food alternatives I choose... | Multiple choice (max 5)

Poll: Main barriers towards eating plant-based food

What is the main barrier **you** encounter when purchasing plant-based food products?



High prices remain as main barrier for plant-based alternatives. Lack of taste became more of an issue.

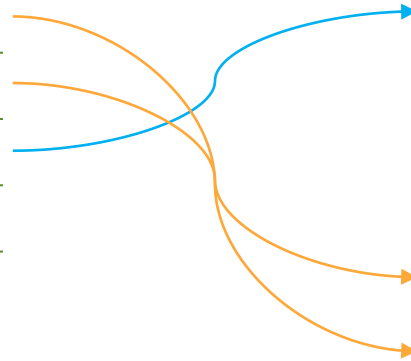
Drivers of plant-based food alternatives total sample (%)

Top 5 barriers when choosing plant-based alternatives 2021

- #1 Too expensive
- #2 not enough choice
- #3 Lack of support: family/partner
- #4 Not tasty enough
- #5 Don't want to change habit/routines

Top 5 barriers when choosing plant-based alternatives 2023

- #1 Too expensive
- #2 Not tasty enough **caution!**
- #3 Need more information
- #4 Worried about health **caution!**
- #5 Don't want to change habit/routines
- #6 not enough choice
- #7 Lack of support: family/partner

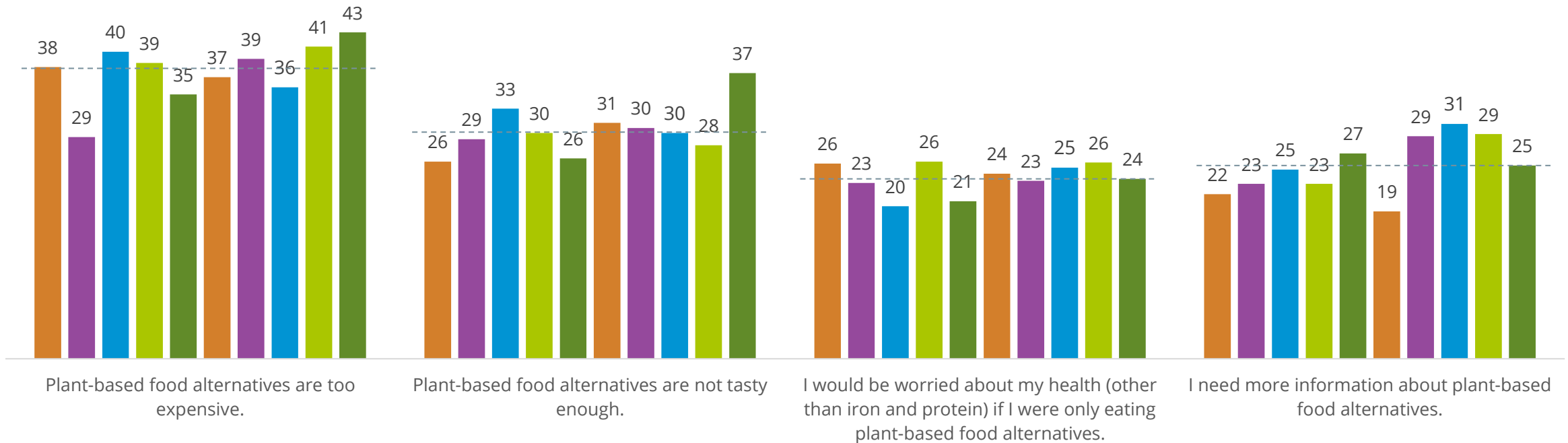


Experienced markets (AT,DE, NK, UK) struggled the most with plant-based alternatives being expensive and non-tasty.

Top 4 reasons NOT to choose plant-based alternatives (%) – Total Sample



Legend: Austria (orange), Denmark (purple), Netherlands (blue), Germany (yellow-green), Italy (green), France (brown), Poland (dark purple), Romania (cyan), Spain (light green), UK (dark green)

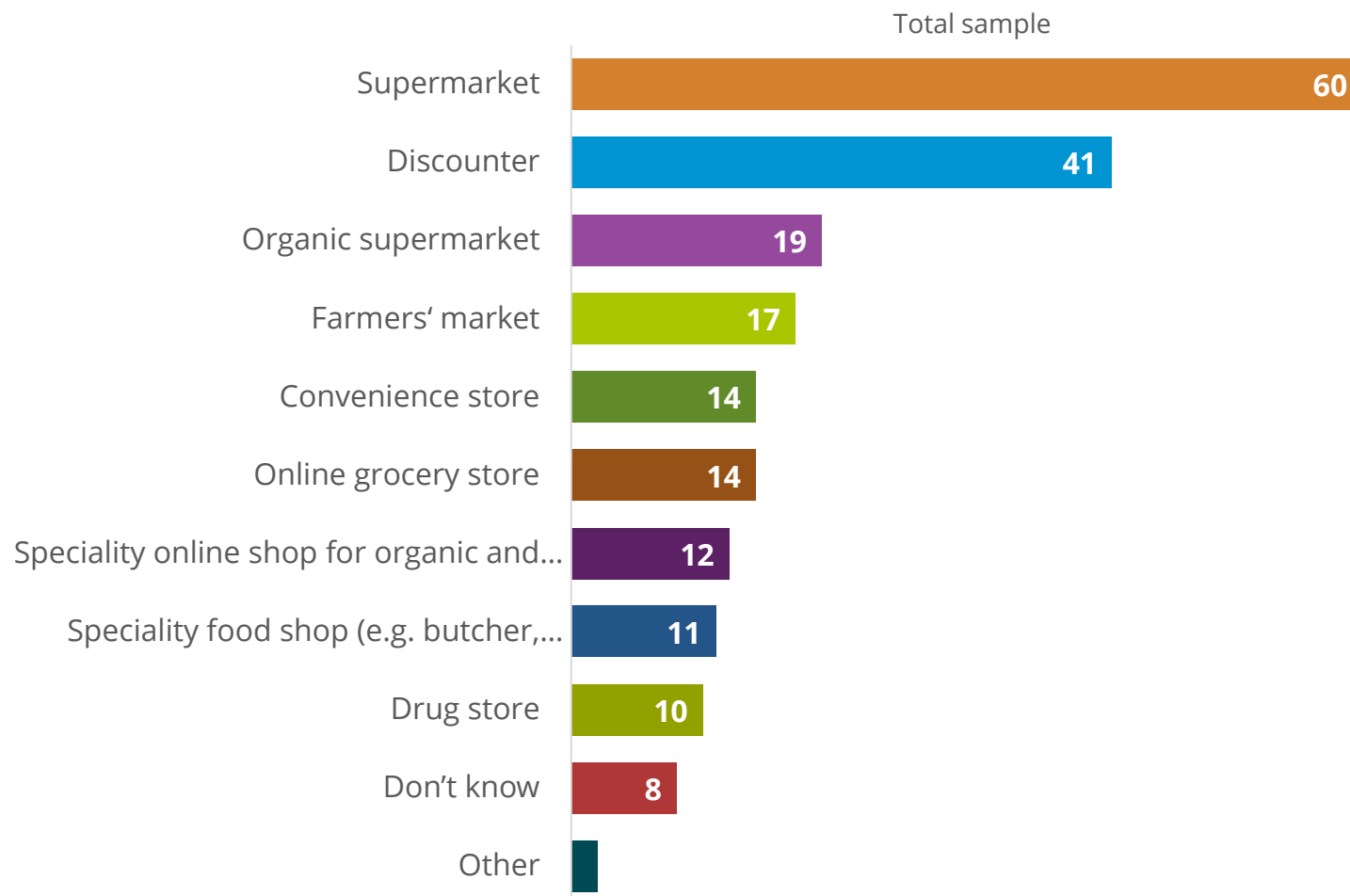


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Q15: Which of the following do you encounter as barriers when choosing plant-based food alternatives? | Multiple choice (max 5)

Supermarkets and discounters are the most common purchase locations for plant-based food alternatives.

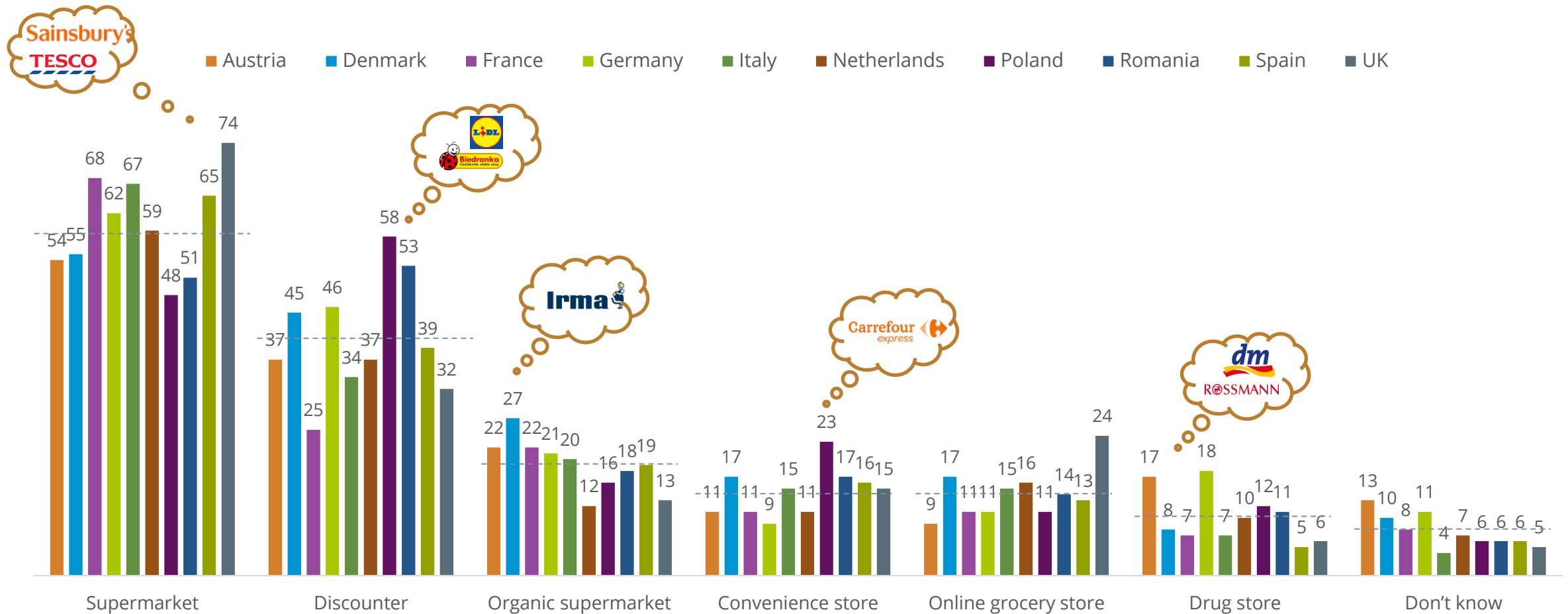
Place of purchase for plant-based food alternatives total sample (%)



	Flexitarians+	Omnivores
	62%	59%
	41%	40%
	25%	15%
	21%	14%
	15%	14%
	18%	12%
	16%	10%
	12%	10%
	14%	8%
	3%	11%
	1%	2%

Increasing availability at discounters can address affordability concerns around plant-based alternatives.

Place of purchase for plant-based food alternatives by country (%)

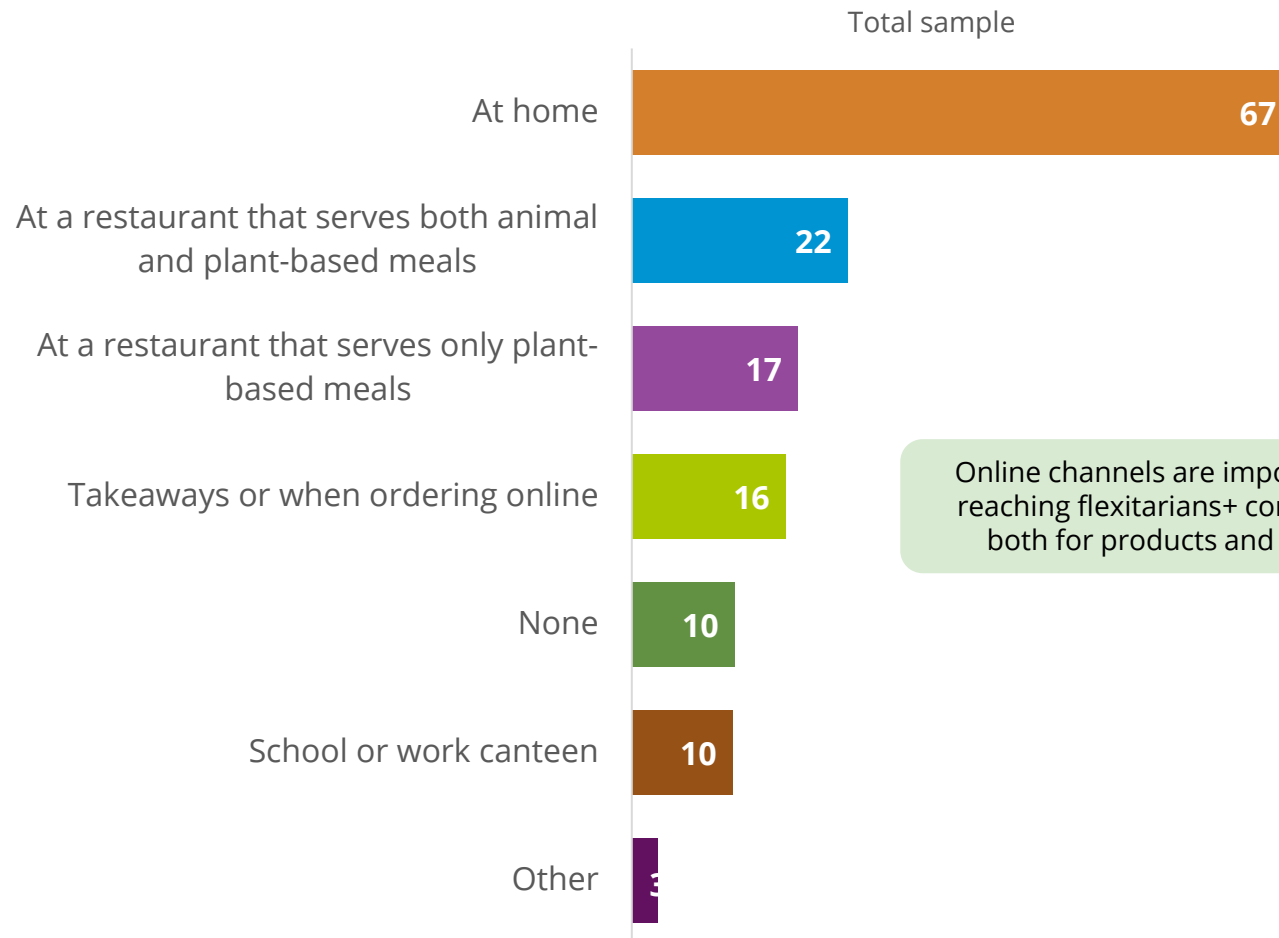


Average ----

Q16: Where are you likely to purchase plant-based food alternatives most frequently in the future? | Multiple choice

Consumers are most likely to eat plant-based alternatives at home and in restaurants.

Place of consumption of plant-based food alternatives total sample (%)

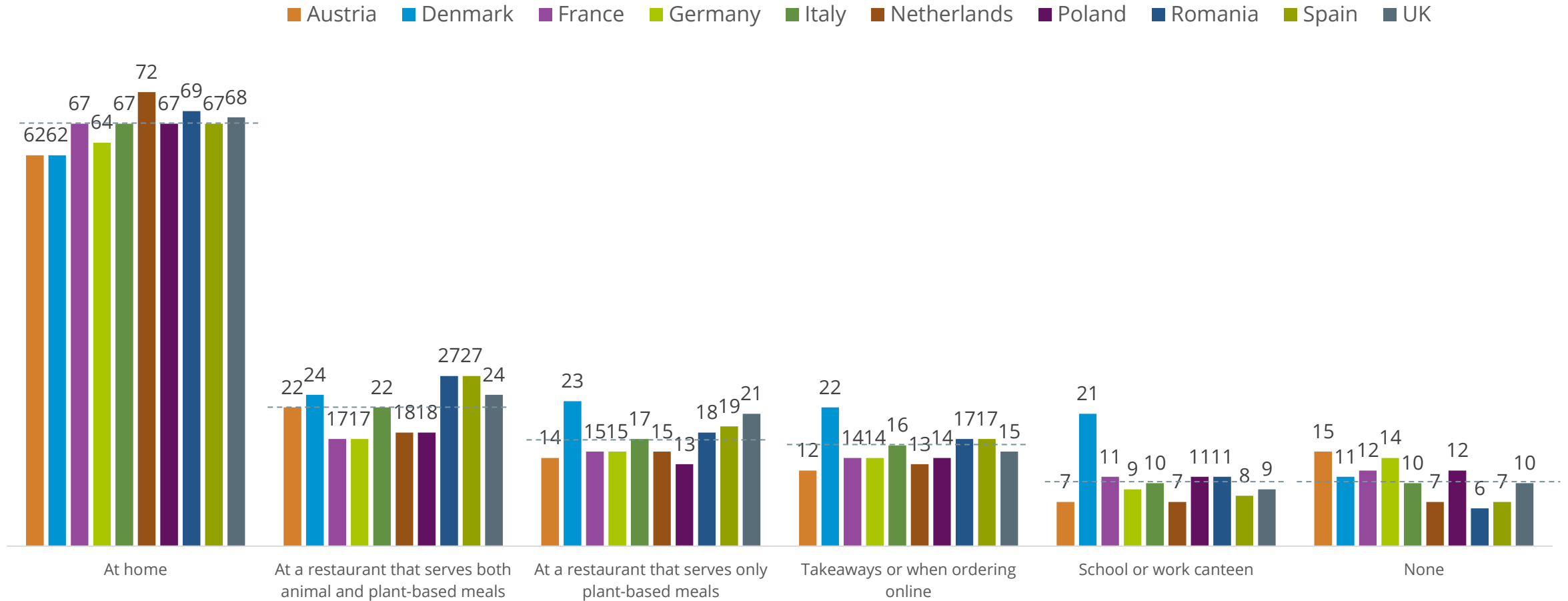


Online channels are important for reaching flexitarians+ consumers, both for products and meals!

	Flexitarians+	Omnivores
	73%	63%
	24%	20%
	21%	14%
	19%	13%
	3%	15%
	12%	9%
	3%	2%

There is a big opportunity to expand the access of plant-based meals at points of consumption...

Place of consumption of plant-based food alternatives by country (%)

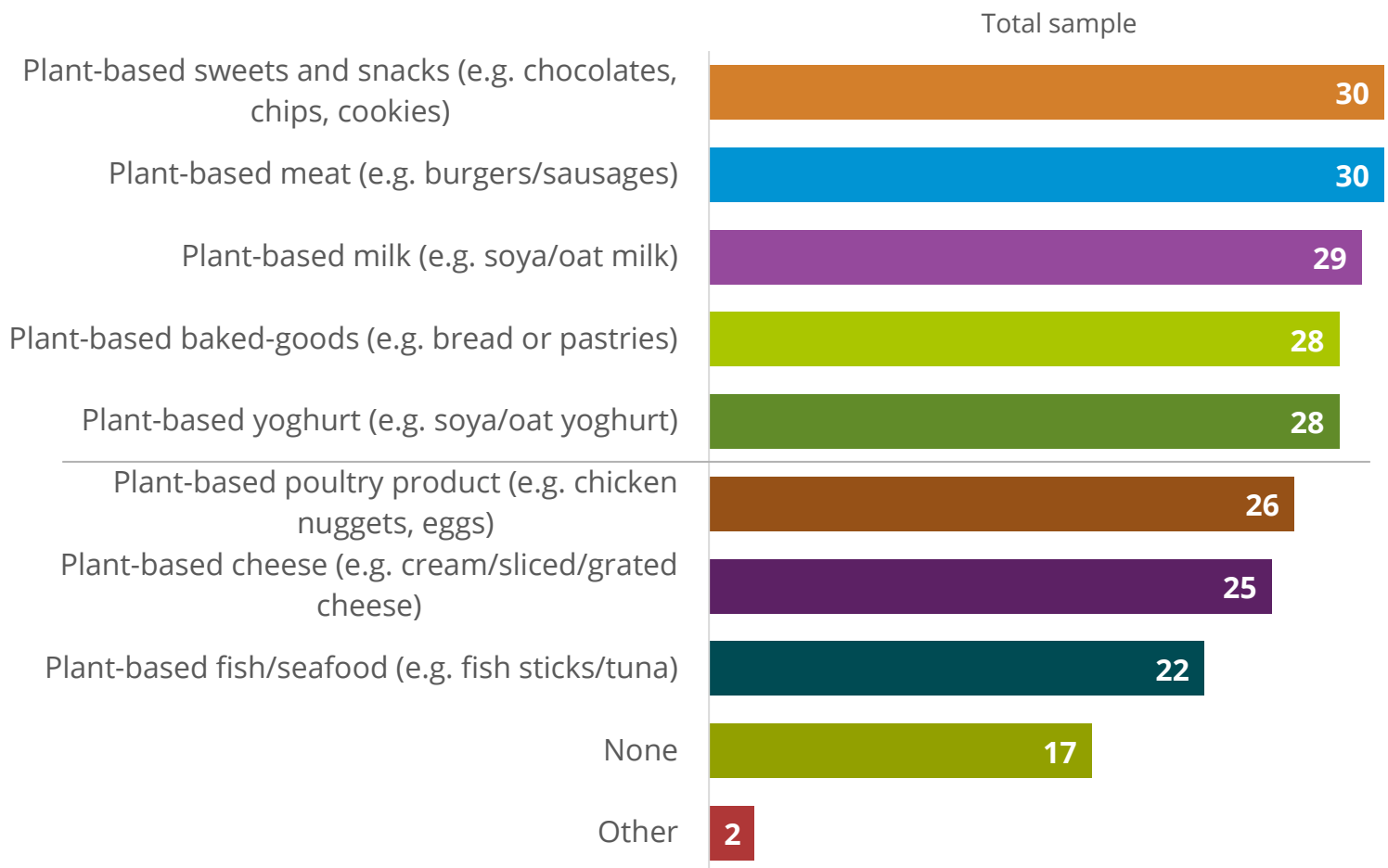


Average ----

Q17: In which of the following locations do you normally consume plant-based food alternatives? | Multiple choice

...As in general, **Europeans want more.**

Plant-based food alternatives by missing categories total sample (%)



	Flexitarians+	Omnivores
	33%	24%
	37%	26%
	34%	25%
	31%	26%
	33%	24%
	31%	24%
	31%	21%
	25%	20%
	8%	23%
	2%	2%

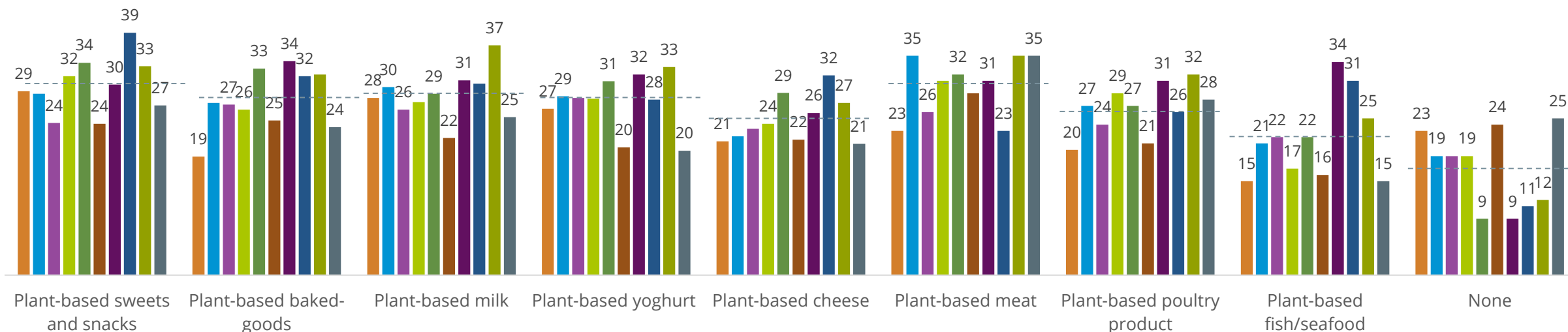
Q18: What kind of plant-based food alternative(s) do you wish you could buy more often in the supermarket or at points of consumption (e.g. restaurants, cafes, etc.)? | Multiple choice

Countries with the highest annual growth in sales (RO, SP, PL) of plant-based alternatives are even eager for more!

Plant-based food alternatives categories missing by country (%)

■ Austria
 ■ Denmark
 ■ France
 ■ Germany
 ■ Italy
 ■ Netherlands
 ■ Poland
 ■ Romania
 ■ Spain
 ■ UK

Availability at supermarkets, discounters and convenience stores will be key for the growing markets!



Average ----

Q18: What kind of plant-based food alternative(s) do you wish you could buy more often in the supermarket or at points of consumption (e.g restaurants, cafes, etc.)? | Multiple choice

Improving social acceptance, affordability, and accessibility of plant-based alternatives is vital for growth.

Key associations driving the adoption of plant-based alternatives: The COM- B Approach (%) – Total Sample

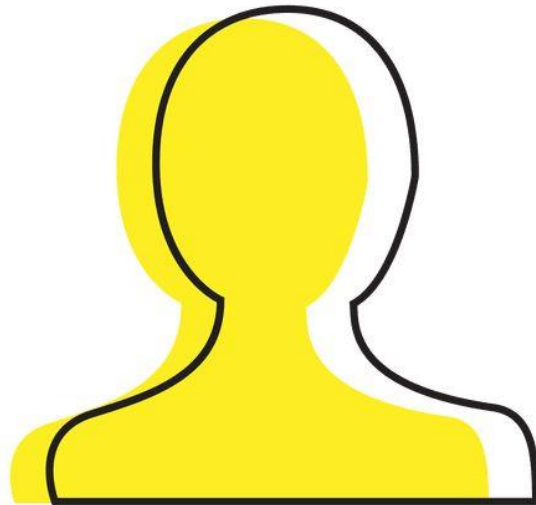
“(59%) Plant-based alternatives **are on sale** often enough”

“(55%) Eating plant-based alternatives **is good** for my health”

“(54%) I know the **benefits** of consuming plant-based alternatives”

“(54%) Eating plant-based alternatives will **reduce negative** effects on the environment”

“(48%) I find it **easy to locate** plant-based alternatives in (online) supermarkets and stores”



“(68%) Eating plant-based alternatives is **not part** of my culture”

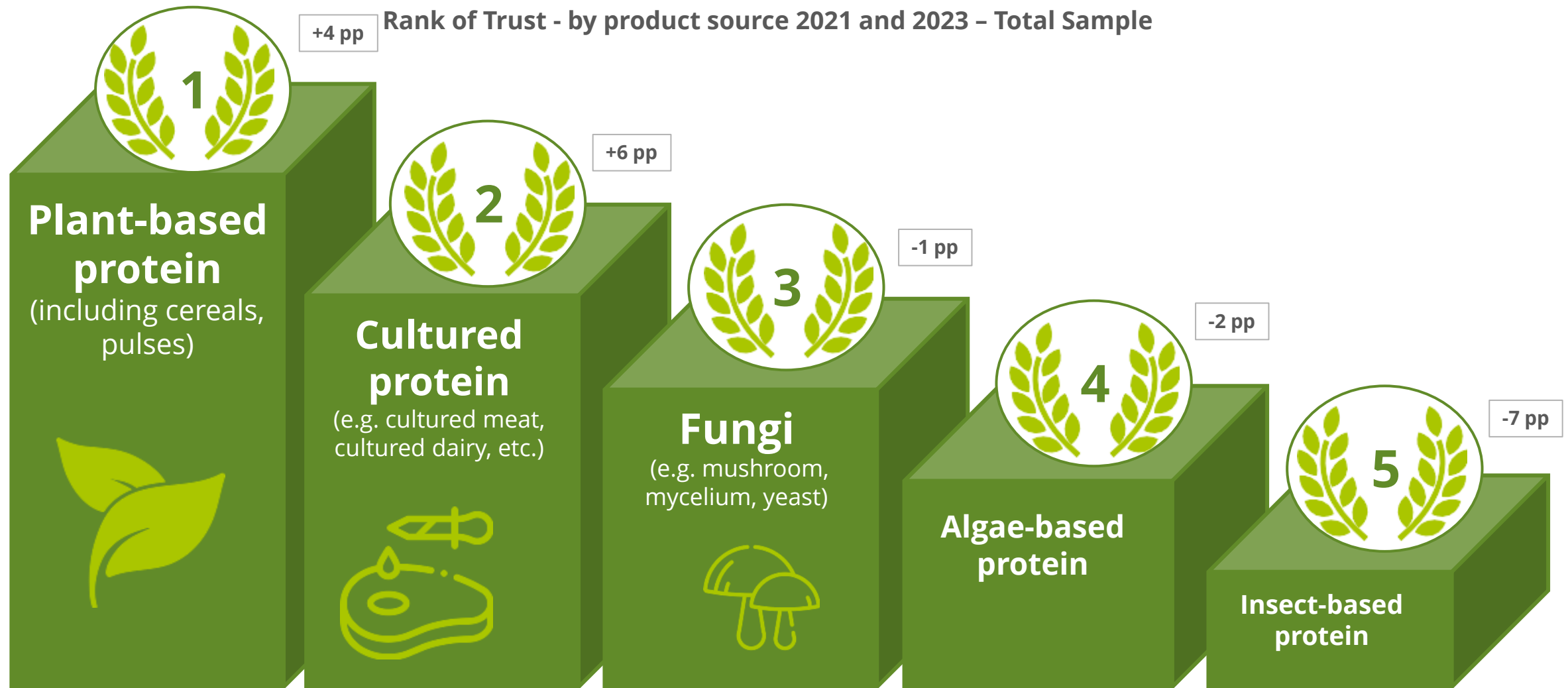
“(68%) People who are important to me **don't think** I should eat plant-based food alternatives most of the time”

“(68%) Plant-based alternatives are **not easy** to obtain at discounted prices”

“(65%) Plant-based alternatives are **not affordable**”

“(64%) I **don't find it easy to locate** plant-based food alternatives at takeaways and delivery restaurants”

European trust plant-based protein the most, followed by cultured protein and fungi-based protein.



Q21: Which of the following alternative proteins do you trust the most? Rank them from 1 (trust the most) to 5 (trust the least). | Single choice

Europeans trust plant-based alternatives mostly because they are safe, accurately labeled and reliable.

Trust towards plant-based food alternatives total sample (%)



Q20: When thinking specifically about plant-based food alternatives, please indicate how much you disagree or agree with each of the following statements. I trust that plant-based food alternatives... | Single choice | Total agreement level (Strongly agree + Agree + Somewhat Agree)

Plant-based protein, cultivated protein, and fungi protein sources are the most favored in Europe.

Rank of Trust - by product source 2023 - Total Sample

Popular sources

Niche sources



Plant-based protein

By location:
Italy
Netherlands

By demographic:
Flexitarians, vegetarians
Boomers, Gen X
Female



Cultured Protein

By location:
Denmark
Germany

By demographic:
Omnivores, vegans
Gen Z, Millennials
Male



Fungi

By location:
Austria
Poland, Romania, UK

By demographic:
Vegans, omnivores
Boomers, Gen X
Male



Algae-based protein

By location:
France
Romania

By demographic:
Pescatarians, vegans
Gen Z, Millennials
Male



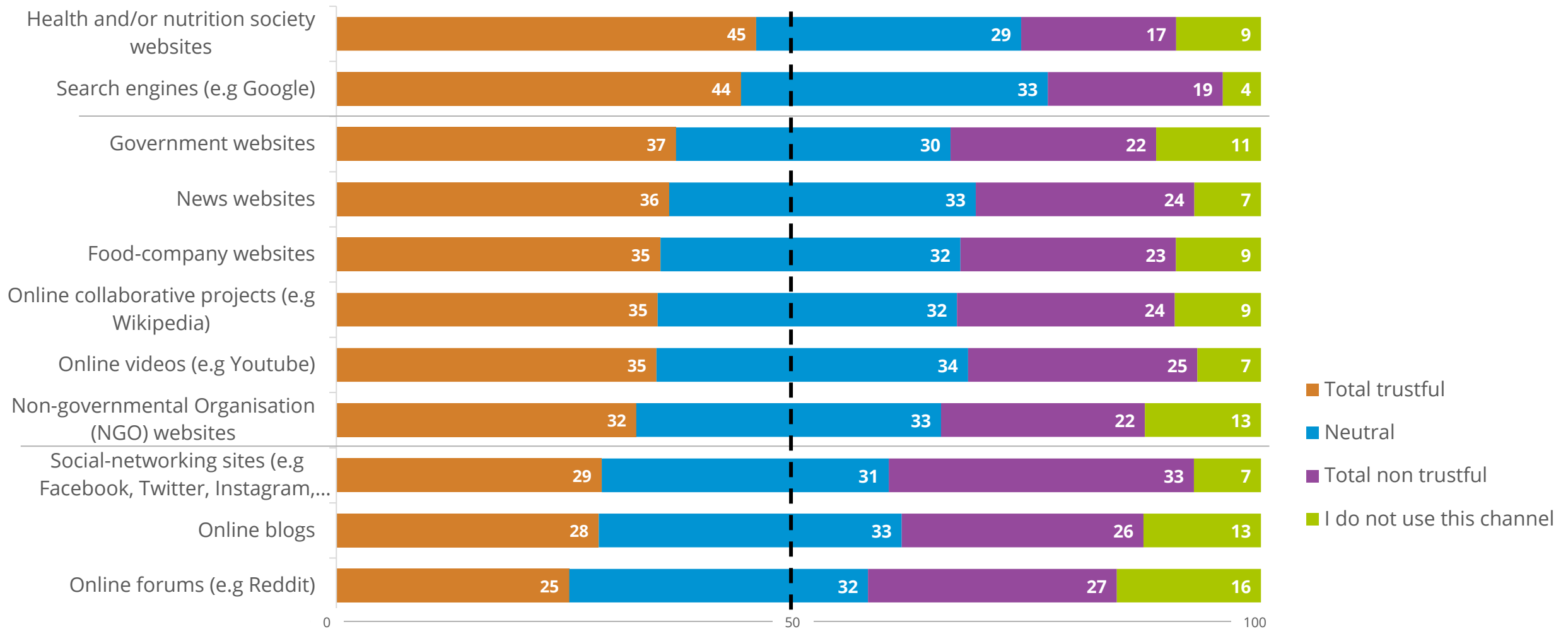
Insect-based Protein

By location:
Netherlands
Austria, Germany

By demographic:
Pescatarians, vegans
Gen Z, Millennials
Male

Health/nutrition websites, and search engines are trusted by consumers the most. SM content is the least trusted.

Trusted sources regarding plant-based food products total sample (%)



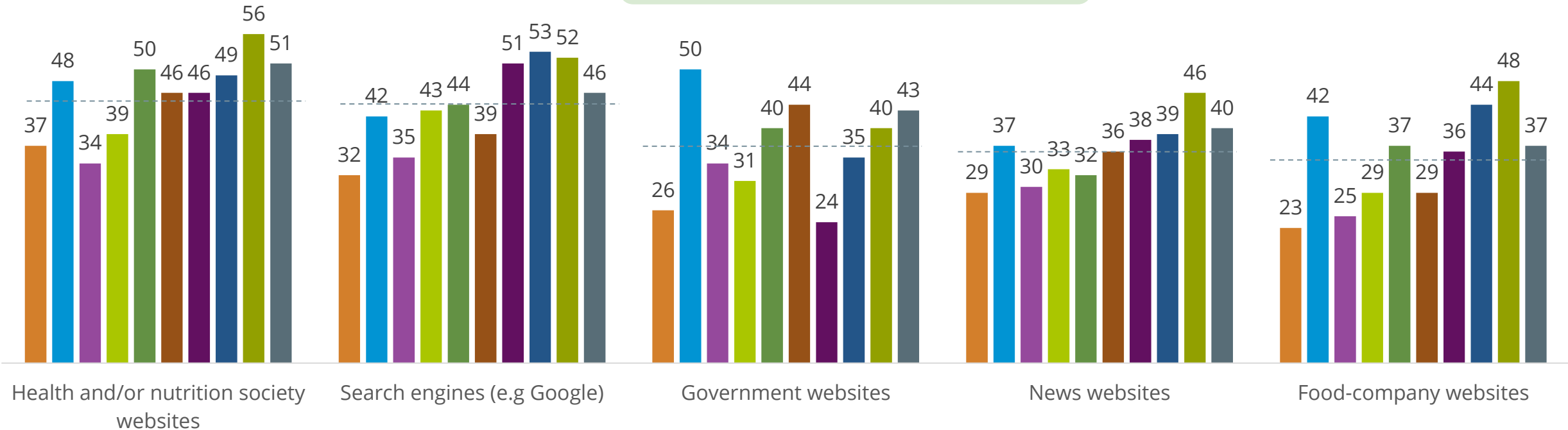
Q31: In general, how much do you trust information about plant-based food products from... | Single choice

Consumers' trust in information about plant-based alternatives varies significantly across countries.

Top 5 trusted sources regarding plant-based food products by country (%)

■ Austria
 ■ Denmark
 ■ France
 ■ Germany
 ■ Italy
 ■ Netherlands
 ■ Poland
 ■ Romania
 ■ Spain
 ■ UK

Denmark has become the first country in the world to publish a roadmap to make its food system more plant based!



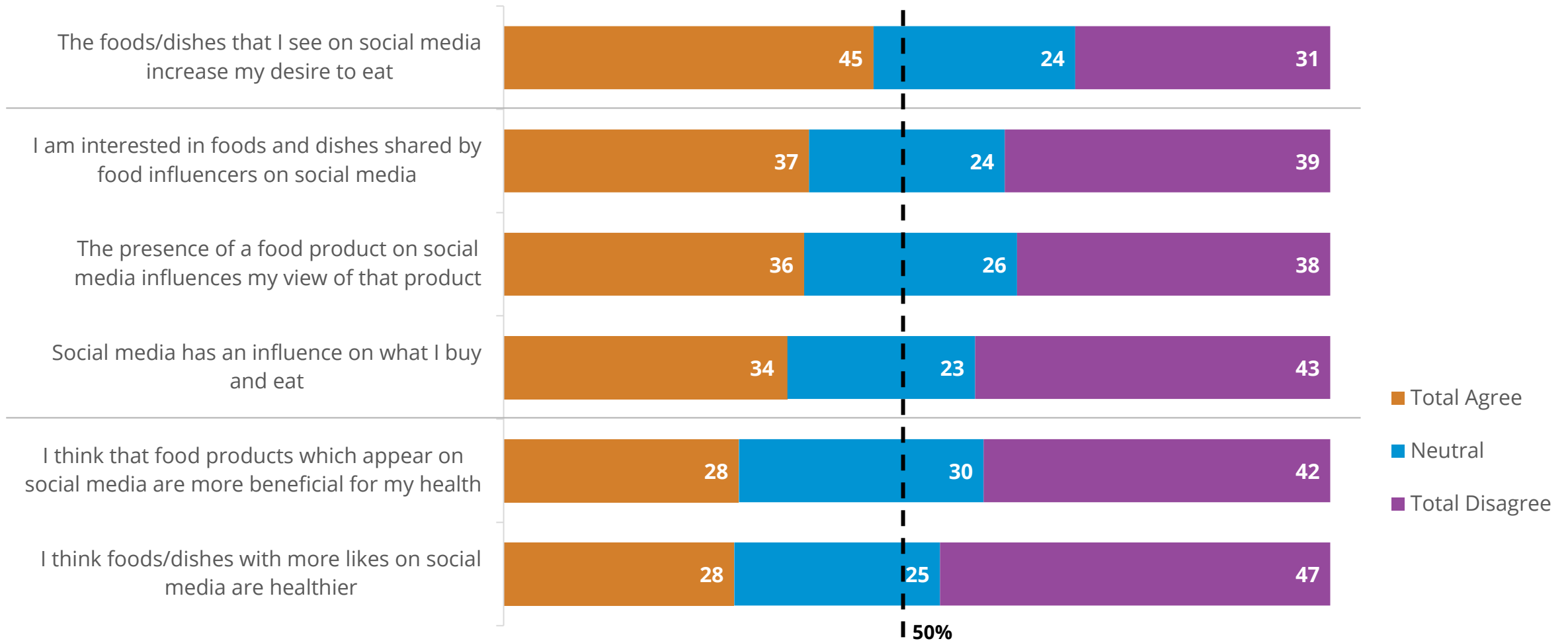
Average ----

Q31: In general, how much do you trust information about plant-based food products from... | Single choice | Total trust level (Very trustful + fairly trustful)

Social media food posts somewhat boost appetite but not health associations.



Influence of social media total social media users (%)



Q35: Please indicate how much you disagree or agree with each of the following statements concerning social media and food attitudes. | Single choice

How to keep increasing the acceptance of plant-based alternatives in Europe?

Before purchase

Be Repetitive: Educating consumers by addressing the why, what, and how of plant-based choices.

Be Social: Extending availability beyond PoS to other consumption locations.

Be Accessible: Addressing concerns around affordability, availability and enjoyable experiences.

During purchase

Be visible: Through a mix of integrated merchandising (fully or partially).

Be diverse: Providing a variety of protein sources and products to increase the likelihood of consumer purchase.

Be informative: Emphasizing transparency and traceability in labeling and communication.

After purchase

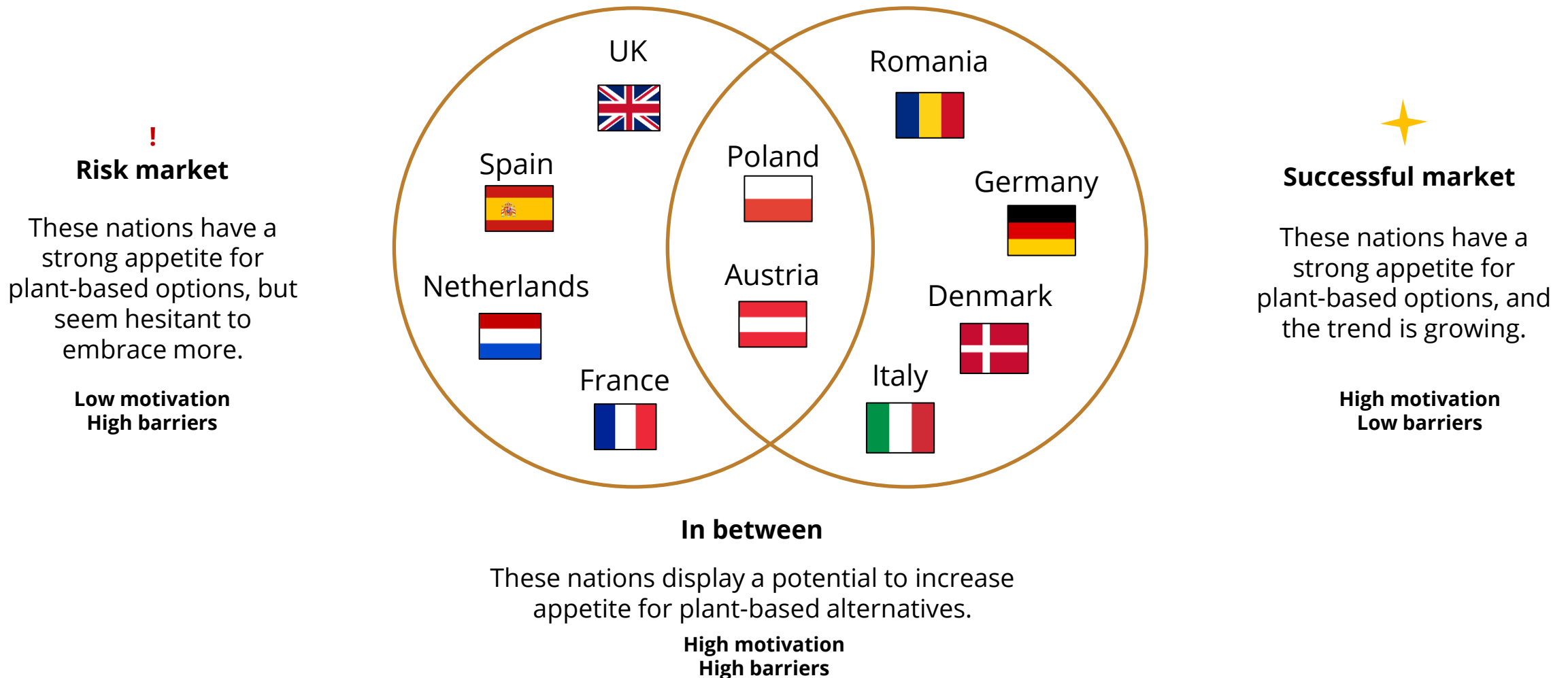
Be credible: Ensuring trustworthiness in both shared content and chosen media channels.

Be open for change: Investing in research and product development to meet the growing demand and expectations (taste).

VI. Conclusions and recommendations



The food consumption landscape for plant-based eating in Europe is evolving at a different rate across countries.



Europe requires a holistic but tailored approach to facilitate a successful transition to plant-based diets.

1

Understand what motivates dietary change

1. Awareness
2. Personal benefits
3. Greater good

2

Normalize plant-based lifestyles

1. Inclusive approach
2. Familiar foods/ingredients
3. Gradual & supportive

3

Improve the value of plant-based alternatives

1. Social approval
2. Accessibility: beyond PoS
3. Trust

1.75

If we continue business as usual we would require the resources of nearly two Earths to sustain our way of life.

Global Footprint Network, 2022





Adopting a plant-based lifestyle is one of the most effective **ways for individuals to reduce their environmental impact.**

<https://www.nature.com/collections/ebbefbfedc>



Investing in plant-based proteins has the highest CO2 savings per dollar of **any sector.**

BCG/Blue Horizon report: "The Untapped Climate Opportunity in Alternative Proteins", Feb-April 2022, BCG/GFMA report, "Climate Finance Markets and the Real Economy": BCG Analysis.



VII. Q&A



Smart Protein Consumer Survey Results



Download the report:

<https://smartproteinproject.eu/market-research/>



 elsa.guadarrama@proveg.com