

Assessing consumer needs and developing new products

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Innovation for Sustainable
Sheep and Goat
Production in Europe



Why Do We Eat What We Eat?

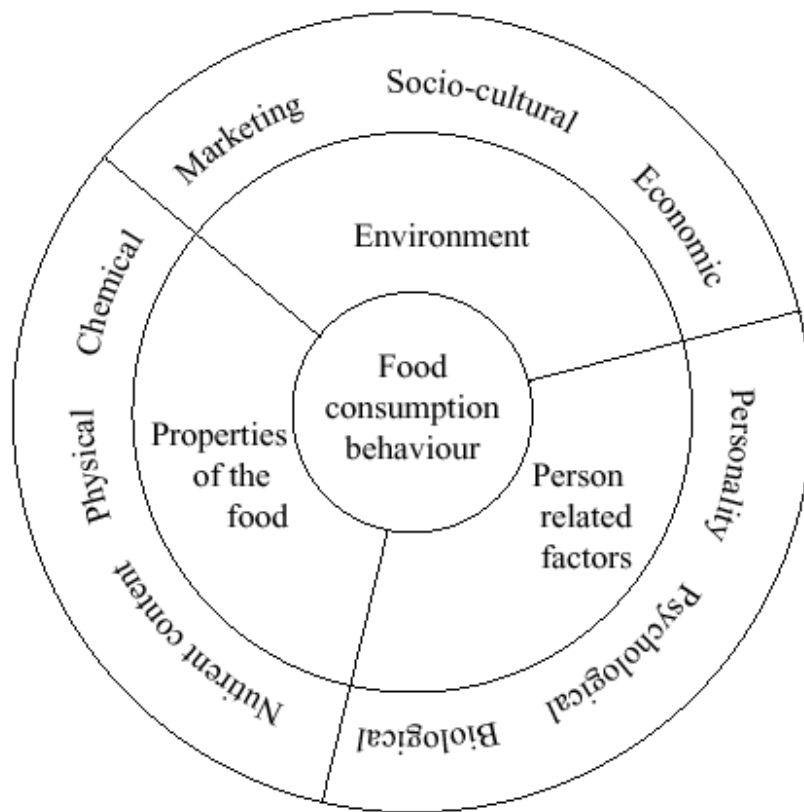
- Custom, Culture, Habits?
- Availability?
- Price?
- Health?
- Tastes, Flavors
- Pleasure
- Reward, Indulgence
- Entertainment
- Ritual

Which is Most Important???

Humans Are Omnivores

- *Omnivores*: Those who eat all foods indiscriminately; eaters of both animal and plant foods.
- However, the human diet is rather narrow compared to what we could eat:
 - Plants: only few species domesticated; edible plants are manifold; algae
 - Animals: insects, worms, rodents, reptiles

The Omnivore's Paradox



- According to Claude Fischler anthropologist, Humans need a lot of variety of food to eat (even vegetarians are omnivores...) but are “risk averse”, and are sceptical towards novel foods (e.g. GMOs, exotic foods, nutraceuticals, etc.)
- Besides we are influenced by many factors

How do we know what a customer needs?



Marketing Research!

Marketing research process

Step 1: Formulating the problem



Step 2: Developing an Approach to the Problem



Step 3: Formulating a Research Design



Step 4: Data Collection (Field Work)



Step 5: Analyzing Data



Step 6: Reporting the Research

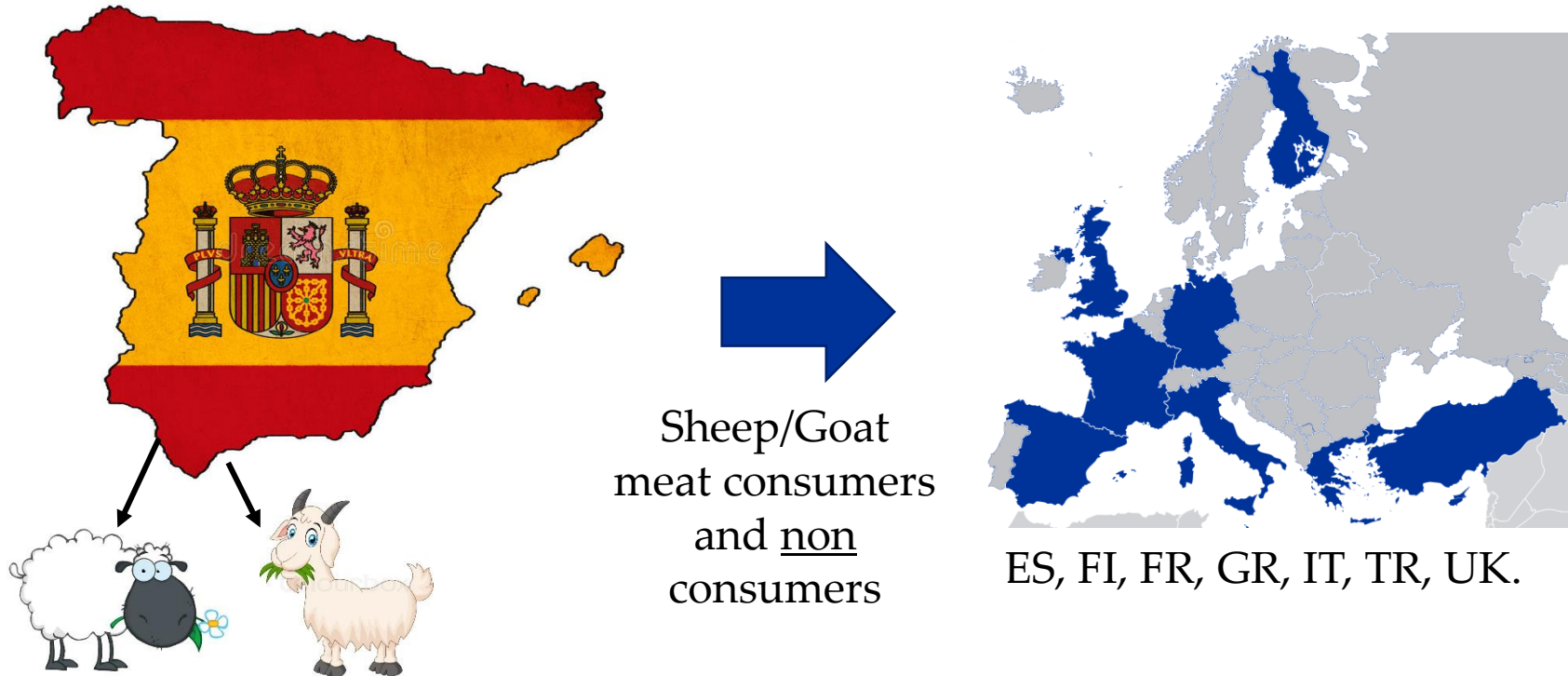
Marketing research process

Step 1: Formulating the problem

Formulating a research problem in cross-cultural settings

- Comparability → similarities and differences
 - Define the marketing research problem in terms of domestic and foreign environmental and cultural factors. Then, compare.
- Equivalence
 - The problem must have the same meaning and role across cultures.
 - Must be measured using the same methods and measures.

Example of formulating the problem in cross cultural research



Management problem: Should we change the advertising message, the product label?

How is Lamb consumption in your country?

- Most people likes it?
- Traditional meal?
- Special occasions vs everyday meal?
- Popular cuts?
- Is it considered as a healthy meal? Authentic?
- How important is a “local” origin?
- Where do people buys it?
- Why do people do not eat lamb?

Example of formulating the problem in cross cultural research

Comparability:

- Familiar with Lamb consumption → special occasion (Christmas, Easter).
- Different levels of interest in health

Equivalence:

- Popular cuts vary between countries
- Preference → local, except Finland

=> Consumer preferences → What are consumer preferences and barriers regarding their consumption of lamb meat?

Marketing research process

Step 1: Formulating the problem



Step 2: Developing an Approach to the Problem

Step 2: Developing an Approach to the Problem

- Marketing research → cognitive approach
- Two main views:
 - Etic → Universal view
 - Investigating many cultures, an absolute or universal criteria applies.
 - Emic → Culturally specific
 - Examines the phenomenon from within the system (only one culture).

Marketing research process

Step 1: Formulating the problem



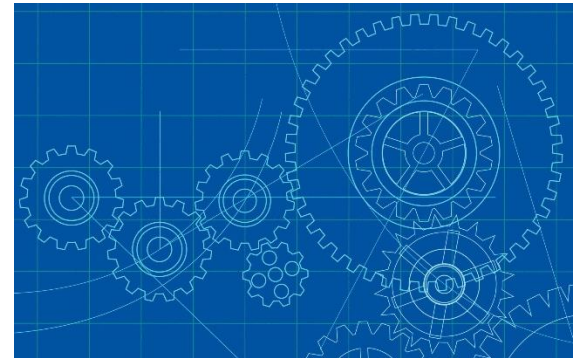
Step 2: Developing an Approach to the Problem



Step 3: Formulating a Research Design

Step 3: Formulating a Research Design

- A **research design** is a framework or blueprint for conducting the marketing research project.
- Affected by the nature of the research problem
 - Quantitative: What?
 - Qualitative: How? Why?
 - Mixed: Enhance the scope and comprehensiveness.



Qualitative vs. quantitative research

	Qualitative Research	Quantitative Research
Objective	To gain a deeper understanding, contextualize a phenomenon, the why and how of things	To quantify the data and generalize the results from the sample to the population
Process	Inductive, subjective, recurrent	Deductive, objective, sequential
Sample	Small number of <u>non-representative</u> cases	Large number of <u>representative</u> cases
Data Analysis	Non-statistical	Statistical
Outcome	Develop an initial understanding, theory development	Recommend a course of action
Examples	In-depth interviews, focus groups case studies	Surveys, Experiments



Marketing research process

Step 1: Formulating the problem



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Step 4: Data Collection (Field Work)



Qualitative research

Qualitative research: Laddering and means-end chain analysis

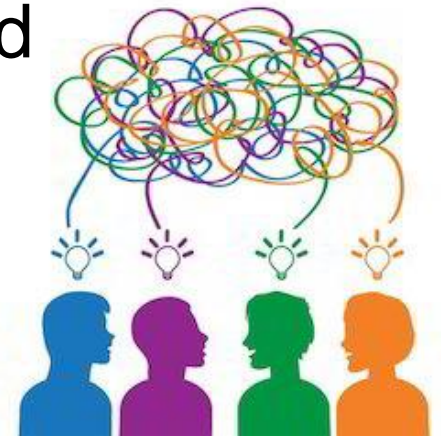
Interviewing technique that attempts to understand and uncover the link between product attributes, personal outcomes (benefits), and values → It is achieved by repeating the following question:

Why is this important for you?



Qualitative research: focus groups

- Pre-screened, homogeneous group (per country)
- Requires a moderator, assistant, video/voice recorder, comfortable place and refreshments
- Participants are encouraged to talk openly about their opinions and respond to other members
- Audiovisual assistance might be used
- Everybody gets a chance to talk
- Focus on a specific topic



What we did?

Literature review: 143 papers on lamb/sheep consumption

Results:

- Gender differences
- Different consumer groups by use, taste
- Origin, cut, nutritional information → really important

Qualitative research

Focus groups

- 7 countries, regular & occasional consumers
- Responsible for food purchasing
- Between 25-65 years old

In-depth interviews (laddering)

- 7 countries, including non-consumers
- Responsible for food purchasing
- Between 25-65 years old

Qualitative results

Qualitative results: focus groups

"I prefer 'arrosticini' when I'm with my friends, but for me and my family I usually cook the lamb in the oven"

Situation

Safety

"Meat from young animals is purer and has less hormones, so I trust to consume more of it"

"I would never consider buying sheep/goat meat from a supermarket or from a butcher whom I don't know personally"

Purchasing place

"I must admit I don't cook much, just easy things, so regarding lamb, I usually buy chops that are very easy to cook"

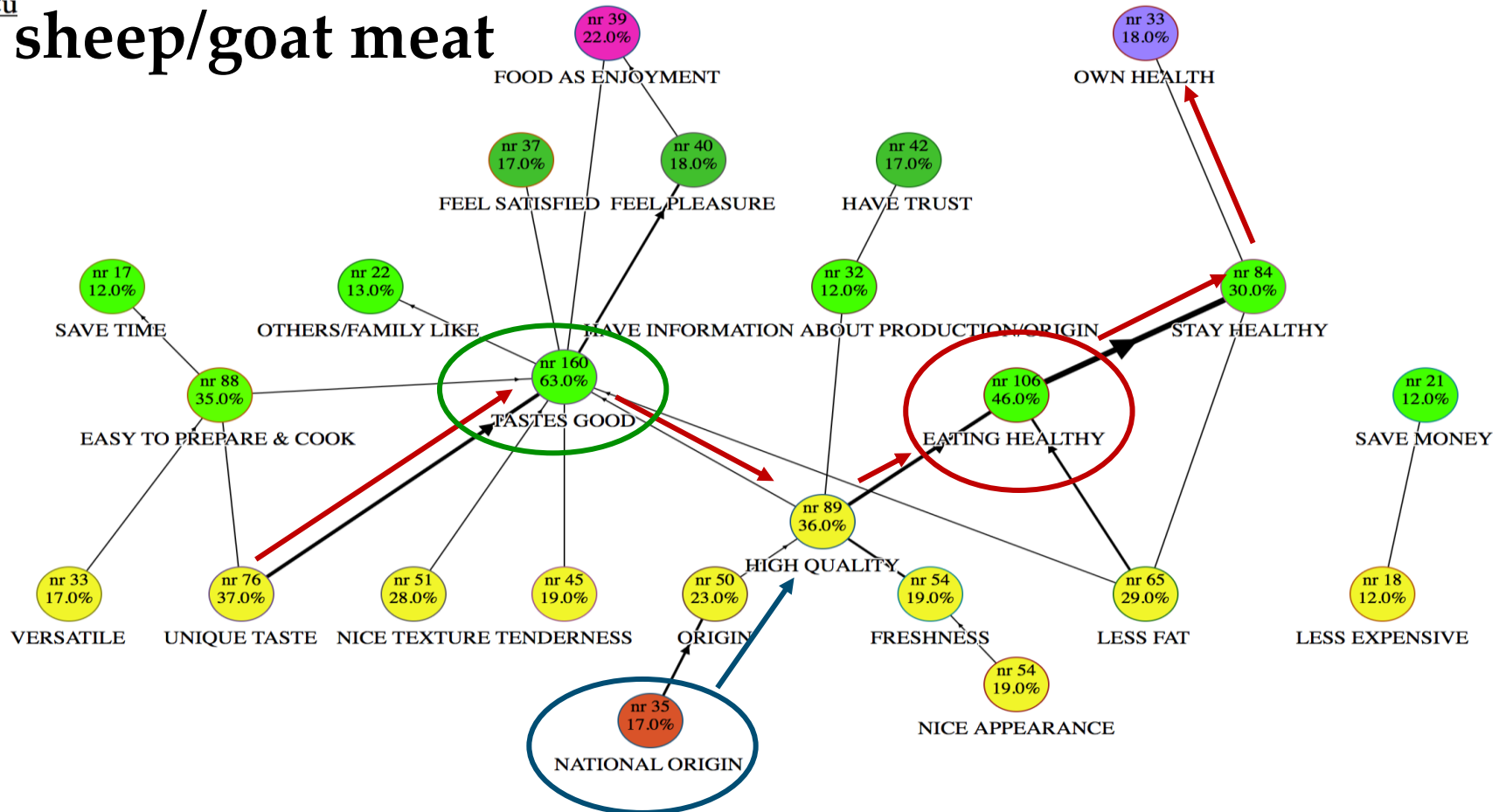
Convenience

"I reduced the purchase of meat in general...I usually purchase beef meat because it is less fatty but I know that lamb meat is better in terms of genuineness"

Health

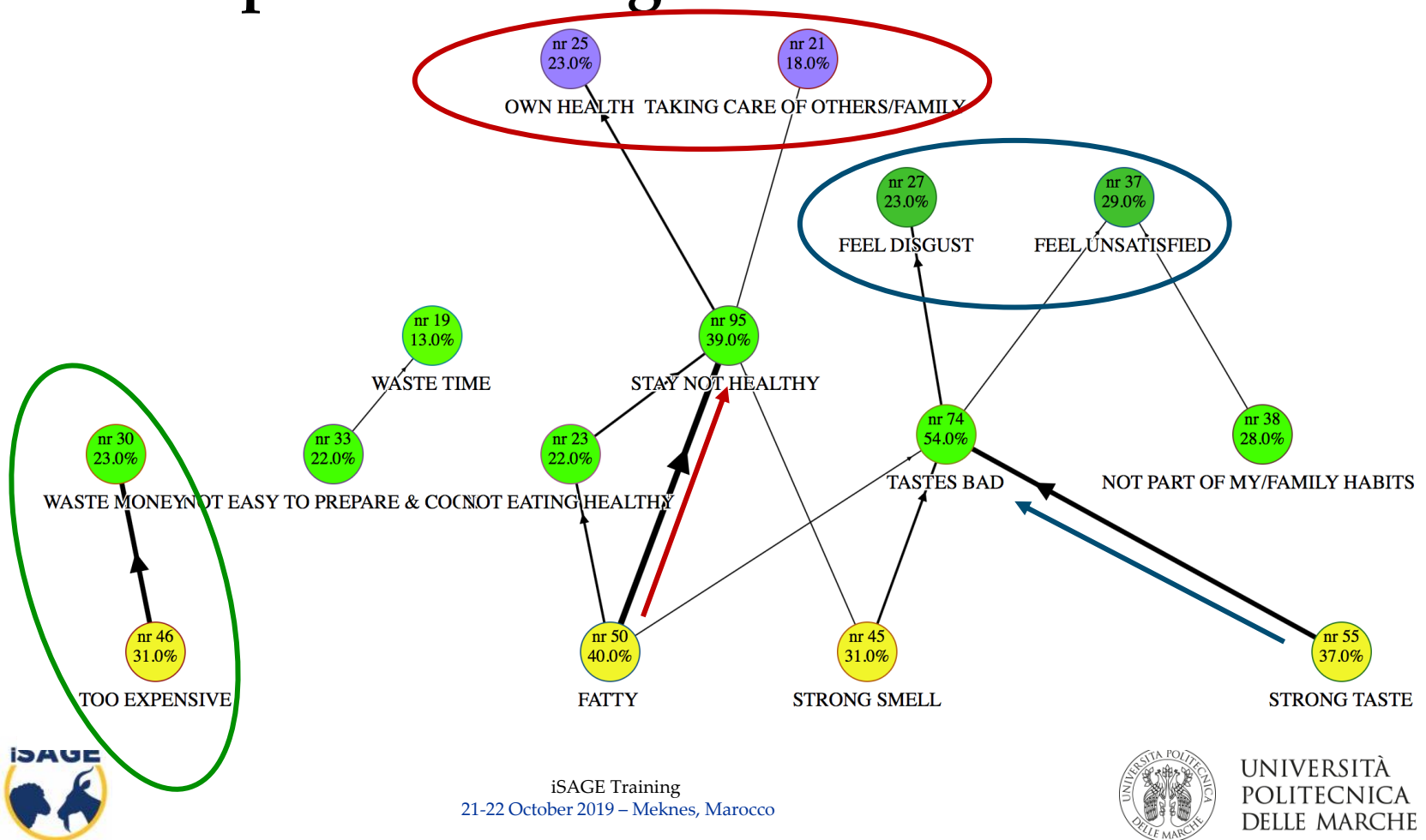
Qualitative results

Cognitive structure of motivations to purchase sheep/goat meat

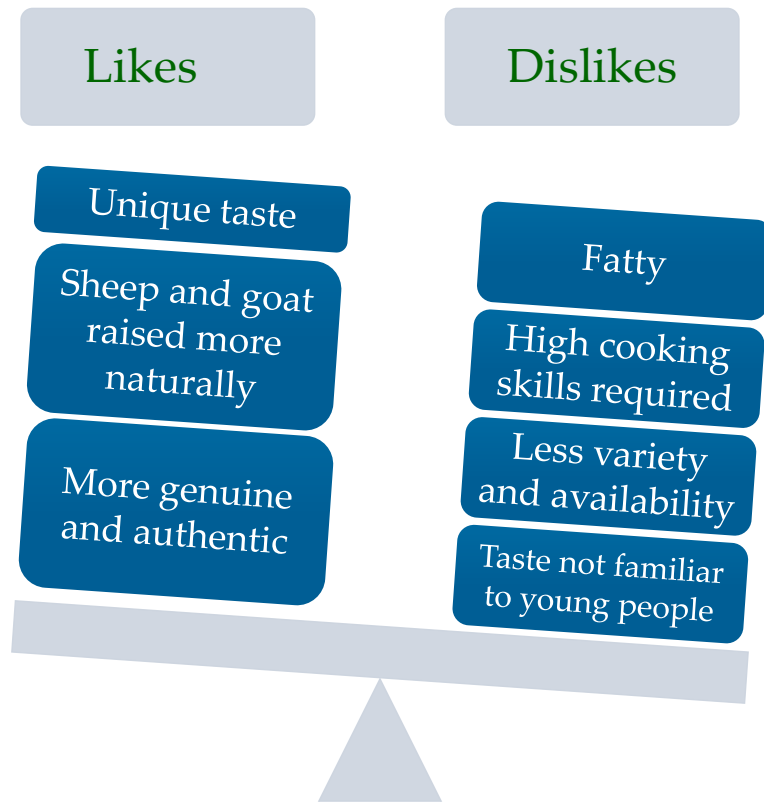


Qualitative results

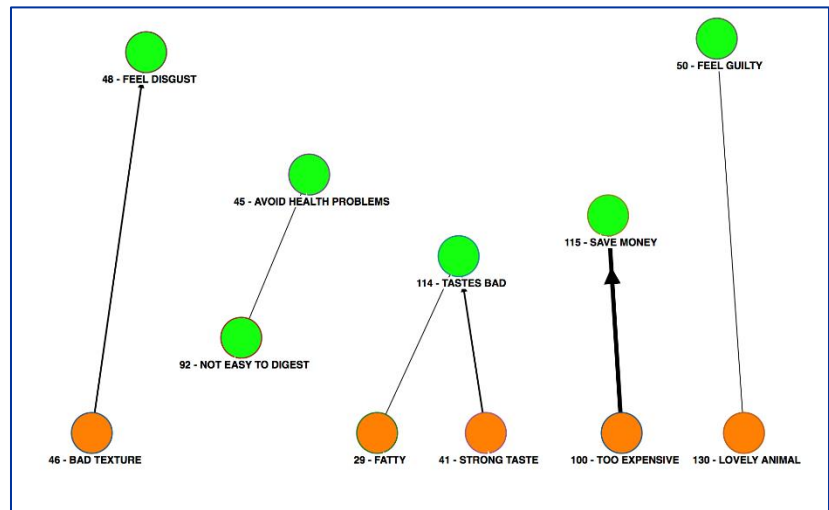
Cognitive structure of barriers linked to the consumption of ewe/goat meat



Results summary- MEAT



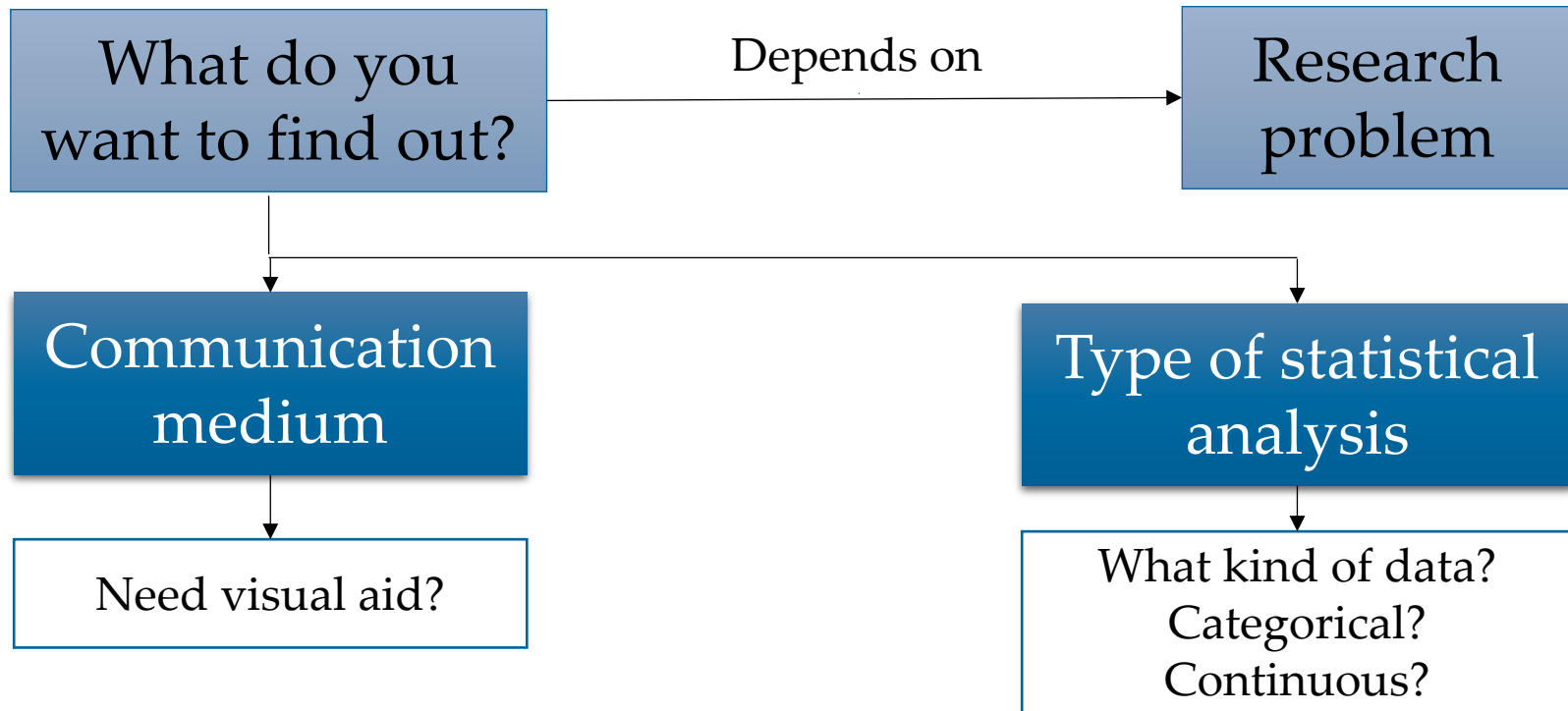
Non-consumers Motives



Quantitative research



Quantitative research: developing a questionnaire



Remember: ask only relevant questions that will provide accurate information

Our objective

- To investigate consumer preferences on goat and sheep meat and dairy products by means of a quantitative survey.

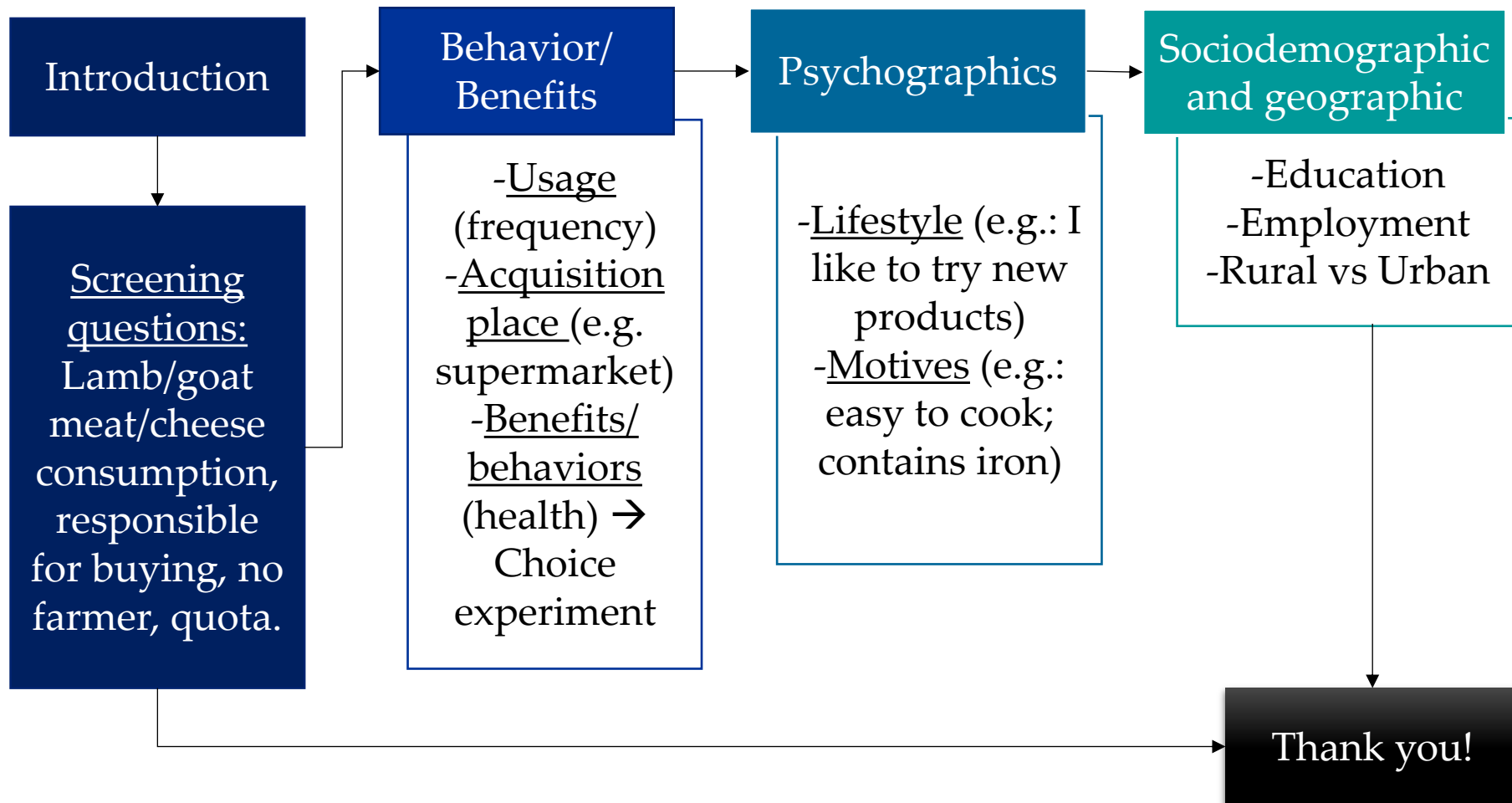


Steps to develop a good cross-cultural questionnaire

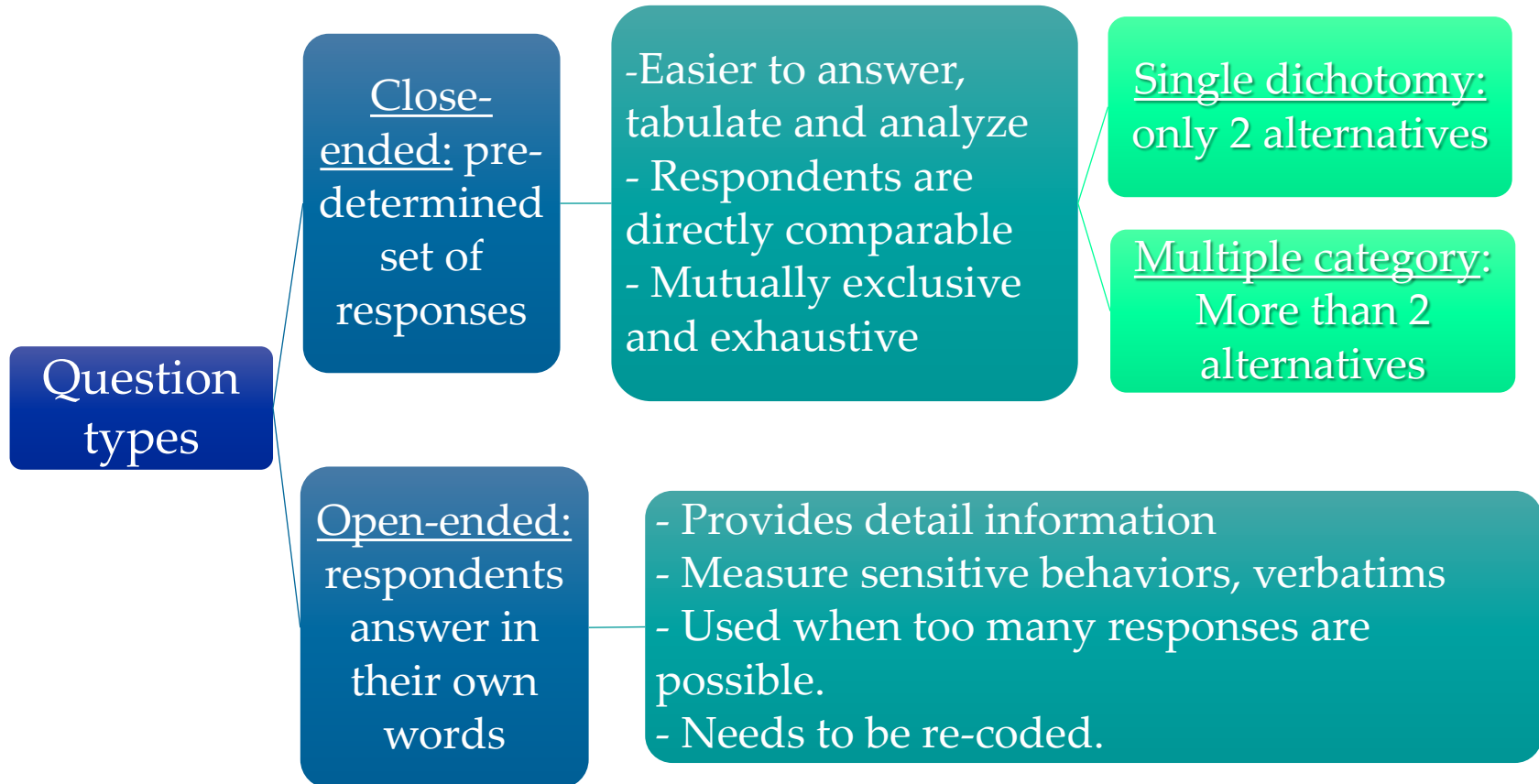
- Check previous studies and literature
- Decide on the order and wording of questions and the layout of the questionnaire
 - Use specific questions related to the concept of interest
 - Keep it simple → avoid “and”, “/”, “or”, double negations
 - Avoid bias questions → desirability, leading
- Work with an international team (advisable)
 - Translate and back-translate
- Select the sample
- Pilot test for omissions and ambiguity
 - Correct the problems and pretest again, if necessary



Questionnaire structure



Question formats



Examples

- Open questions

Will you please describe your thoughts about a person who shoplifts items from a grocery store to keep from going hungry?

- Dichotomous Questions

Have you ever eaten lamb meat?

☐ Yes

☐ No

- Multiple choice

Which of the following lamb cuts is your preferred one?

☐ Lamb chops ☐ Lamb cutlets ☐ Lamb leg ☐ Other: _____

Other liker scales

- Frequency

How frequently do you eat lamb meat in restaurants?

☐ Never ☐ Seldom ☐ Sometimes ☐ Often ☐ Almost always

- Agreement

I choose products for their taste rather than for their nutritional value

☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

- Bi-polar scales

Familiar product ☐ ☐ ☐ ☐ ☐ ☐ ☐ New product

Who do you want to interview?

1) Who is your population?

- All people who might provide you with key information → consumers



2) Sampling



Convenience
sample



Random
sample



Stratified
sample

Our stratified sample

- Based on Eurostat 2016/2017
- 7 countries
 - Finland, France, Greece, Italy, Spain, Turkey and UK
- Gender/occupation
 - Female, Male
 - Employed, Unemployed, Retired/Student (inactive population)
- Age
 - 18-24, 25-34, 35-44, 45-54, 55-64 years old

Additional filters

- Responsible or partially responsible for household grocery shopping
- Not related to the food industry
- Specific filters:
 - For meat → Lamb/goat meat consumers
 - For cheese → Ewe/goat or mixed cheese consumers














Methods: choice experiment structure - MEAT



- 4 types of labels tested
 - Halal, Organic, Carbon footprint, PGI/PDO
- Choice experiment
 - 12 choice sets, 9 attributes
 - Labeled: 4 alternatives
 - Lamb leg, lamb chops, goat chops, Beef T-bone
 - A no-choice alternative



Labels per country

Labels/ Country	Spain	Finland	France	Greece	Italy	UK	Turkey
Halal							
PDO/PGI		-					-
Organic							
Carbon footprint							

Choice experiment design for meat

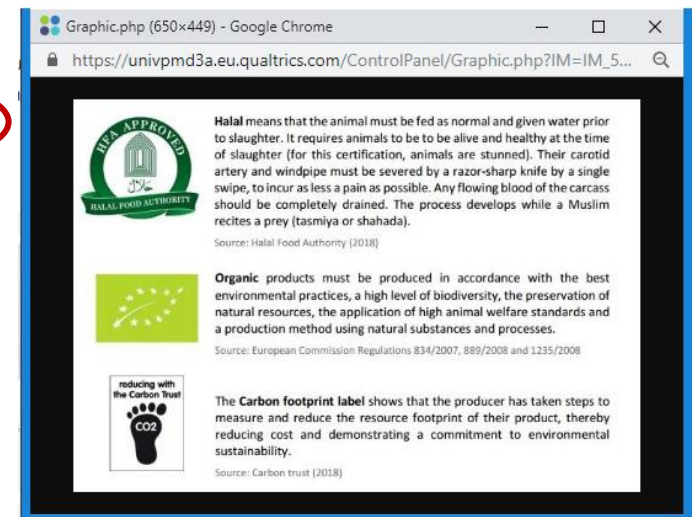
Attributes	Lamb leg	Lamb chops	Goat chops	Beef T-bone
Price	<ul style="list-style-type: none"> •Average price •-30% •+30% 	<ul style="list-style-type: none"> •Average price •-30% •+30% 	<ul style="list-style-type: none"> •Average price •-30% •+30% 	<ul style="list-style-type: none"> •Average price •-30% •+30%
Slaughter	<ul style="list-style-type: none"> •Halal •None 	<ul style="list-style-type: none"> •Halal •None 	<ul style="list-style-type: none"> •Halal •None 	<ul style="list-style-type: none"> •Halal •None
Origin	<ul style="list-style-type: none"> •National •EU •Out of EU 	<ul style="list-style-type: none"> •National •EU •Out of EU 	<ul style="list-style-type: none"> •National •EU •Out of EU 	<ul style="list-style-type: none"> •National •EU •Out of EU
PDO/PGI	<ul style="list-style-type: none"> •PDO/PGI •None 	<ul style="list-style-type: none"> •PDO/PGI •None 	<ul style="list-style-type: none"> •PDO/PGI •None 	<ul style="list-style-type: none"> •PDO/PGI •None
Organic	<ul style="list-style-type: none"> •Organic •None 	<ul style="list-style-type: none"> •Organic •None 	<ul style="list-style-type: none"> •Organic •None 	<ul style="list-style-type: none"> •Organic •None
Low carbon footprint	<ul style="list-style-type: none"> •Low carbon footprint •None 	<ul style="list-style-type: none"> •Low carbon footprint •None 	<ul style="list-style-type: none"> •Low carbon footprint •None 	<ul style="list-style-type: none"> •Low carbon footprint •None
Fat content	<ul style="list-style-type: none"> •Low fat •Fatty 	<ul style="list-style-type: none"> •Low fat •Fatty 	-	<ul style="list-style-type: none"> •Low fat •Fatty
Protein content	<ul style="list-style-type: none"> •High protein content •None 	<ul style="list-style-type: none"> •High protein content •None 	<ul style="list-style-type: none"> •High protein content •None 	<ul style="list-style-type: none"> •High protein content •None
Format	<ul style="list-style-type: none"> •Ready to cook •Normal 	<ul style="list-style-type: none"> •Ready to cook •Normal 	<ul style="list-style-type: none"> •Ready to cook •Normal 	<ul style="list-style-type: none"> •Ready to cook •Normal

Choice experiment instructions

Imagine that it is a regular weekday and you decided that you want to eat a dish based on some sort of meat for the next meal with your family. You go to the usual place in which you buy meat and the following alternatives are presented to you. If you want to see the image in more detail, you can zoom on it by clicking on top of it.

Please click "BUY" on the image with the meat that you would like to buy the most. Then write below how many **trays of 500gr** you would like to buy. If you think you would not buy any of the options, then you can select the option "None".

If you need to refresh the meaning of the labels [click here](#)



Choice experiment for meat

Choice set

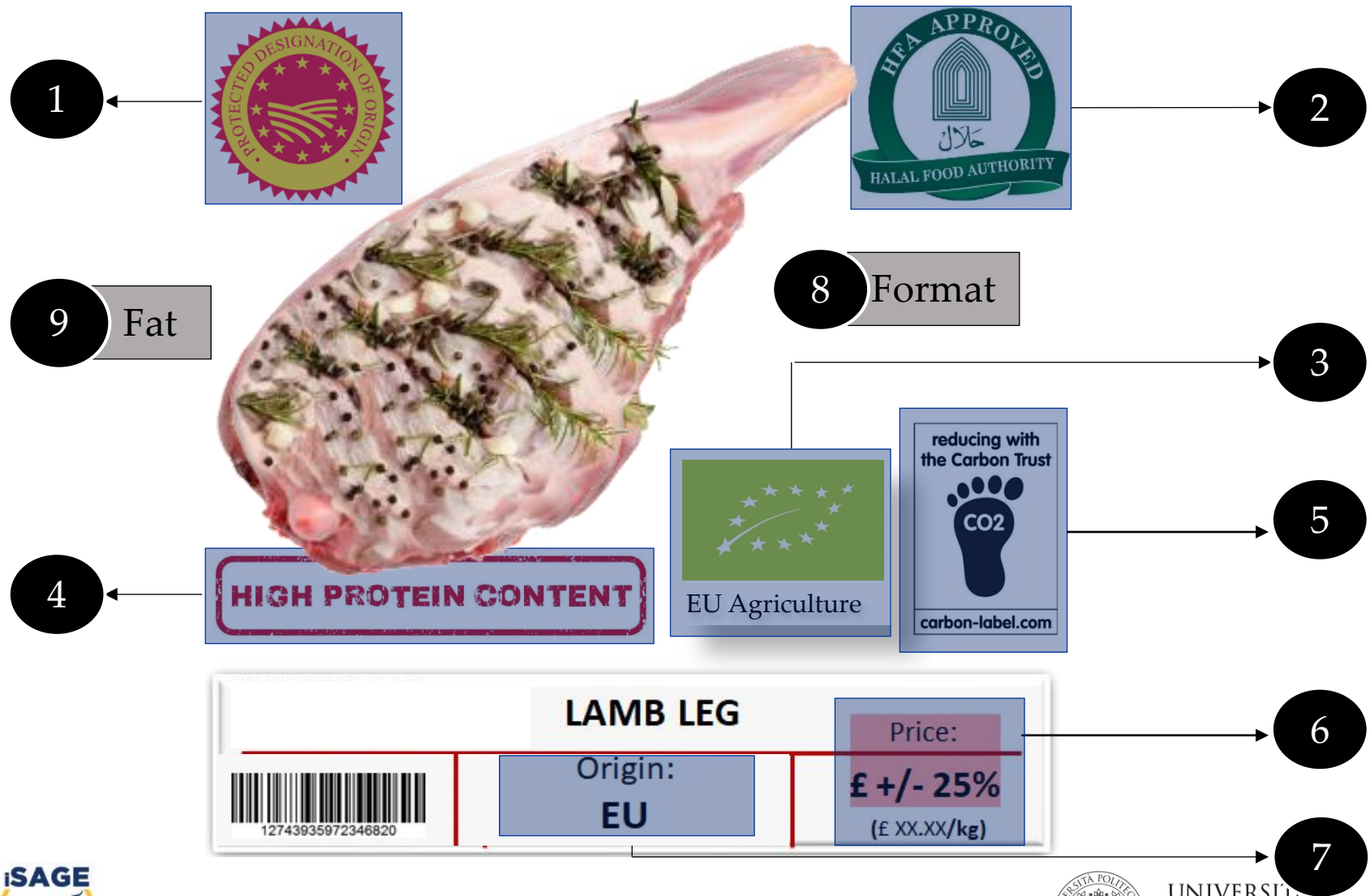
The choice set consists of five options arranged in a grid. The 'Goat Chops' option is highlighted with a red background and a hand cursor pointing to it. Each option includes an image of the meat, a label with product details, and a 'BUY' button.

Product	Origin	Price (€)	Price (€/kg)
LAMB LEG	New Zealand	£ 4.28	(£ 8.56/kg)
GOAT CHOPS	UK	£ 7.80	(£ 15.60/kg)
LAMB CHOPS	UK	£ 8.39	(£ 16.78/kg)
BEEF T-BONE	EU	£ 8.32	(£ 16.64/kg)

Choice experiment for meat



Choice experiment attributes



Data collection for the meat survey

- Data collected from Mid-March to mid-May, 2019

Country	Respondents by May 14 th , 2019	Valid responses
Finland	417	413
France	416	414
Greece	403	400
Italy	419	417
Spain	420	417
Turkey	405	391
UK	420	414

Marketing research process

Step 1: Formulating the problem



Step 2: Developing an Approach to the Problem



Step 3: Formulating a Research Design



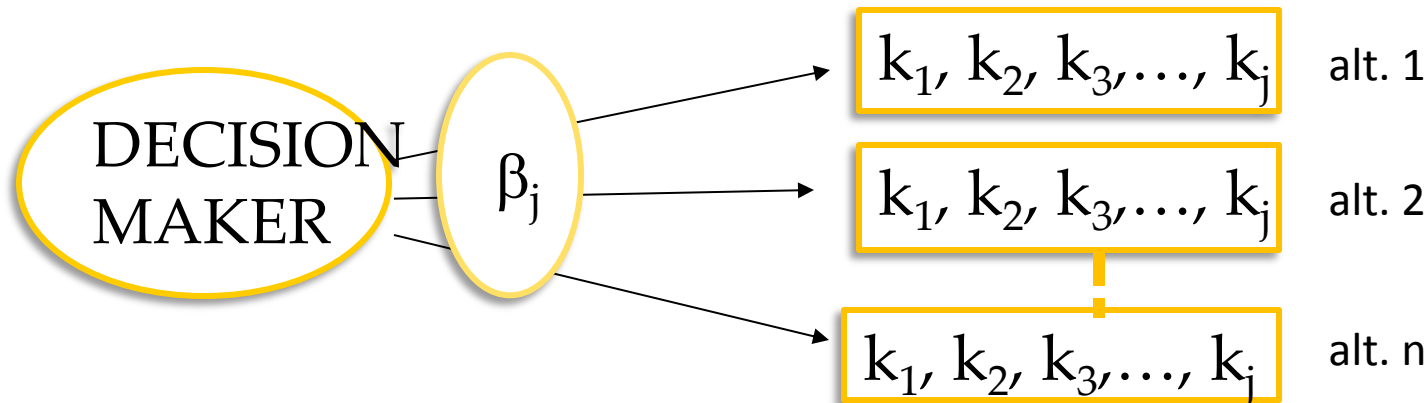
Step 4: Data Collection (Field Work)



Step 5: Analyzing Data

Discrete Choice method

- Respondents (Decision makers) are typically asked to choose their favorite alternative among several hypothetical alternatives (characterized from a certain numbers of attributes k_j) in a sequence of experimentally designed choice tasks.
- The **Purpose** is to obtain estimates of the taste parameter vector β_j which contains marginal utilities of attributes.
- **Willingness-to-pay** is measured by the ration of the marginal utility of attributes and that of cost (price)







Results on sheep and goat meat



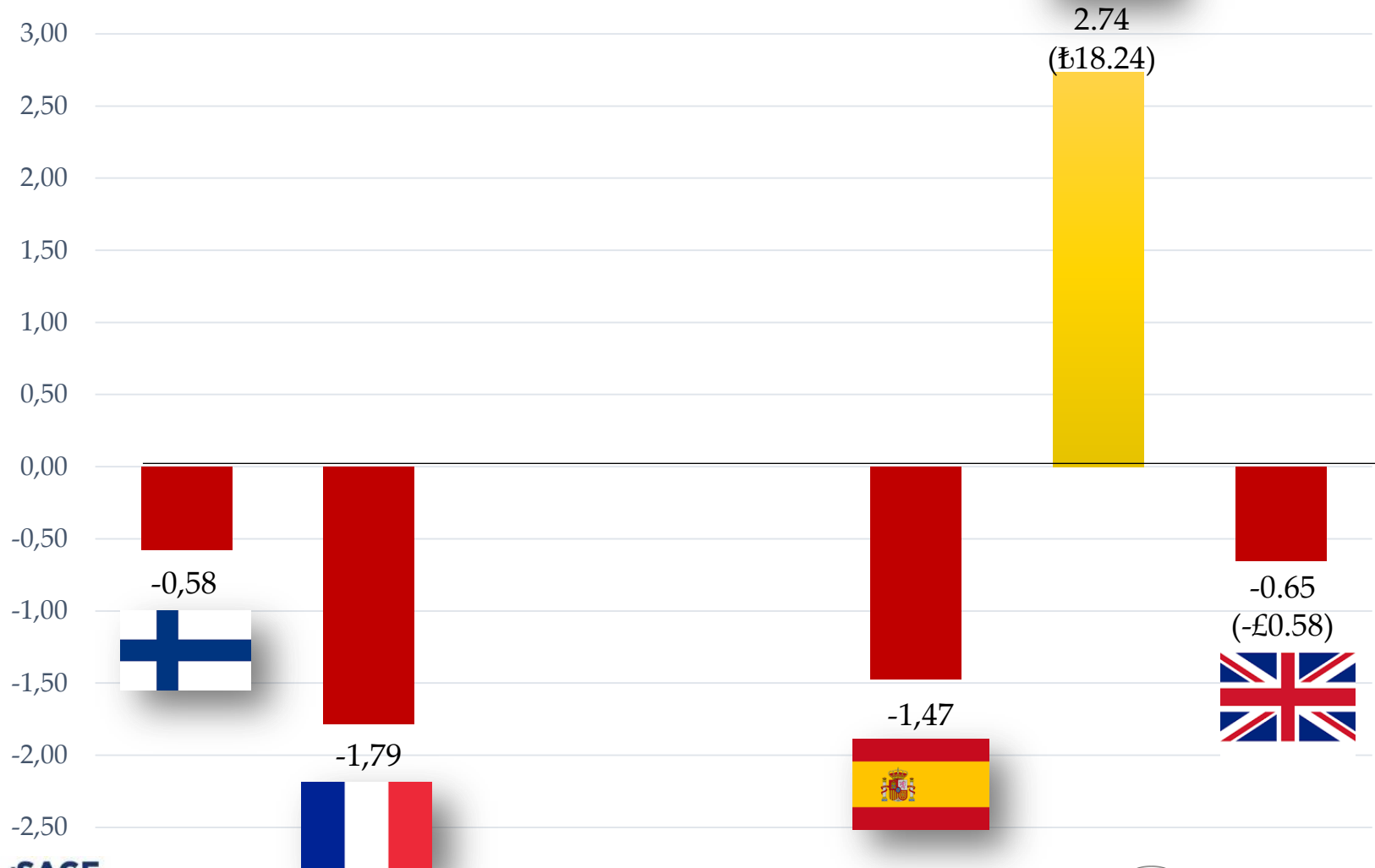
Results: meat cuts and type

*Beef is the reference category

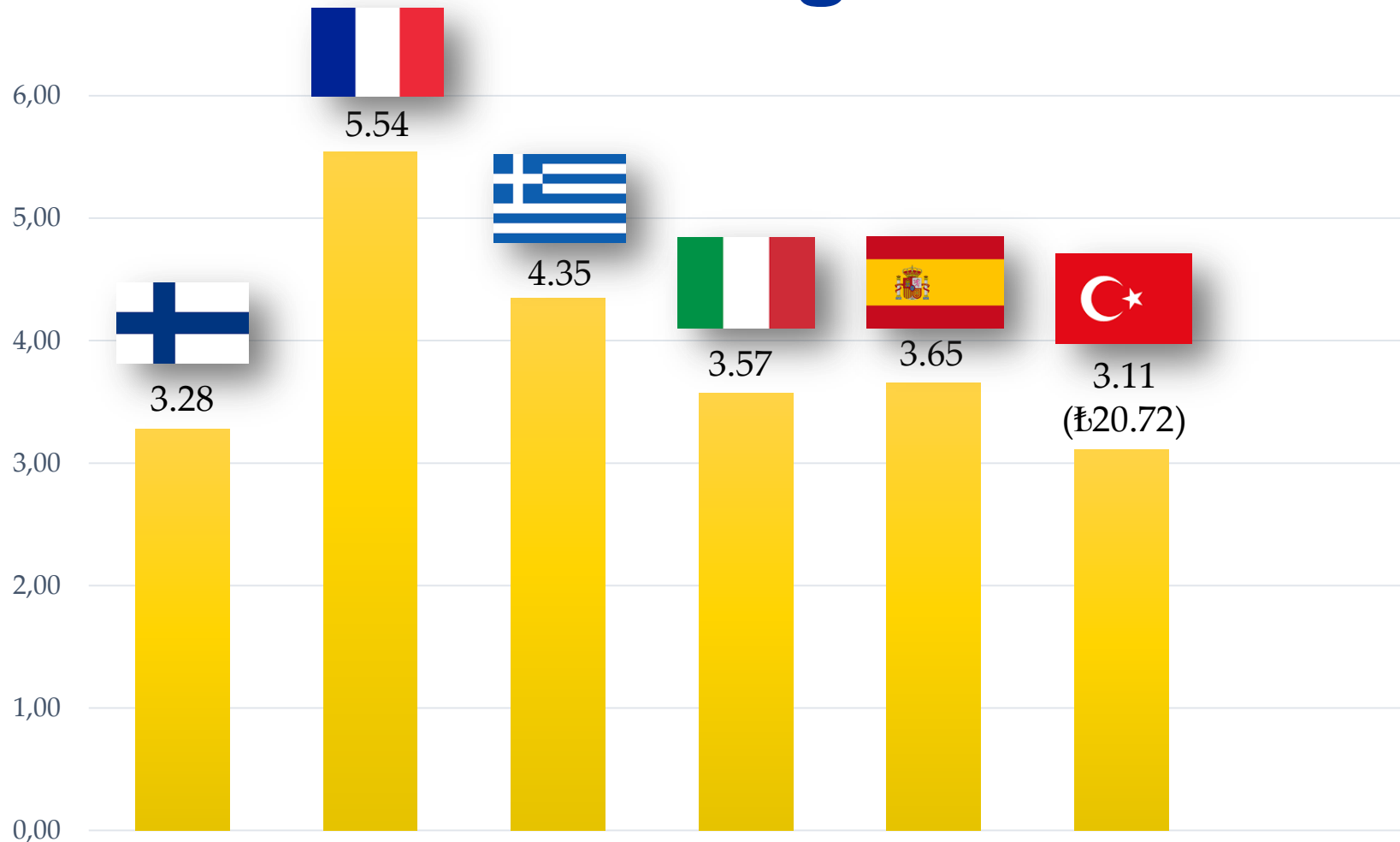
Meat	Finland	France	Greece	Italy	Spain	Turkey	UK
 Beef T-bone	-	-	-	-	-	-	-
 Lamb leg	↓	↓	↓↓	↓	↓	↓	↓
 Lamb chops	↓	↓	↓	-	↑	↑	-
 Goat chops	↓	↓↓	↓	↓	-	↓	↓
None	↓↓	↓	↓	↓↓	↓↓	↓↓	↓↓

5% significance level

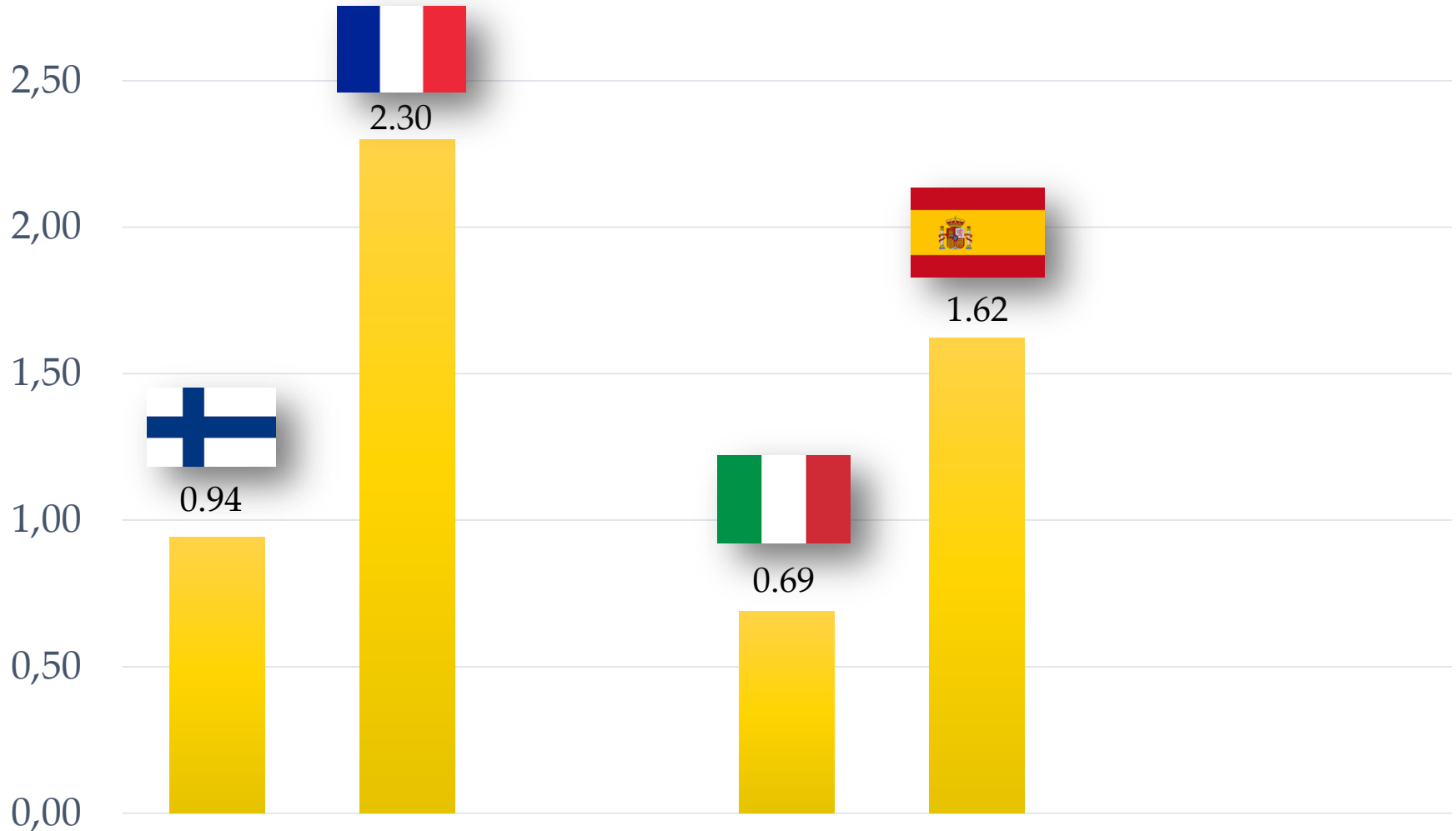
WTP Halal



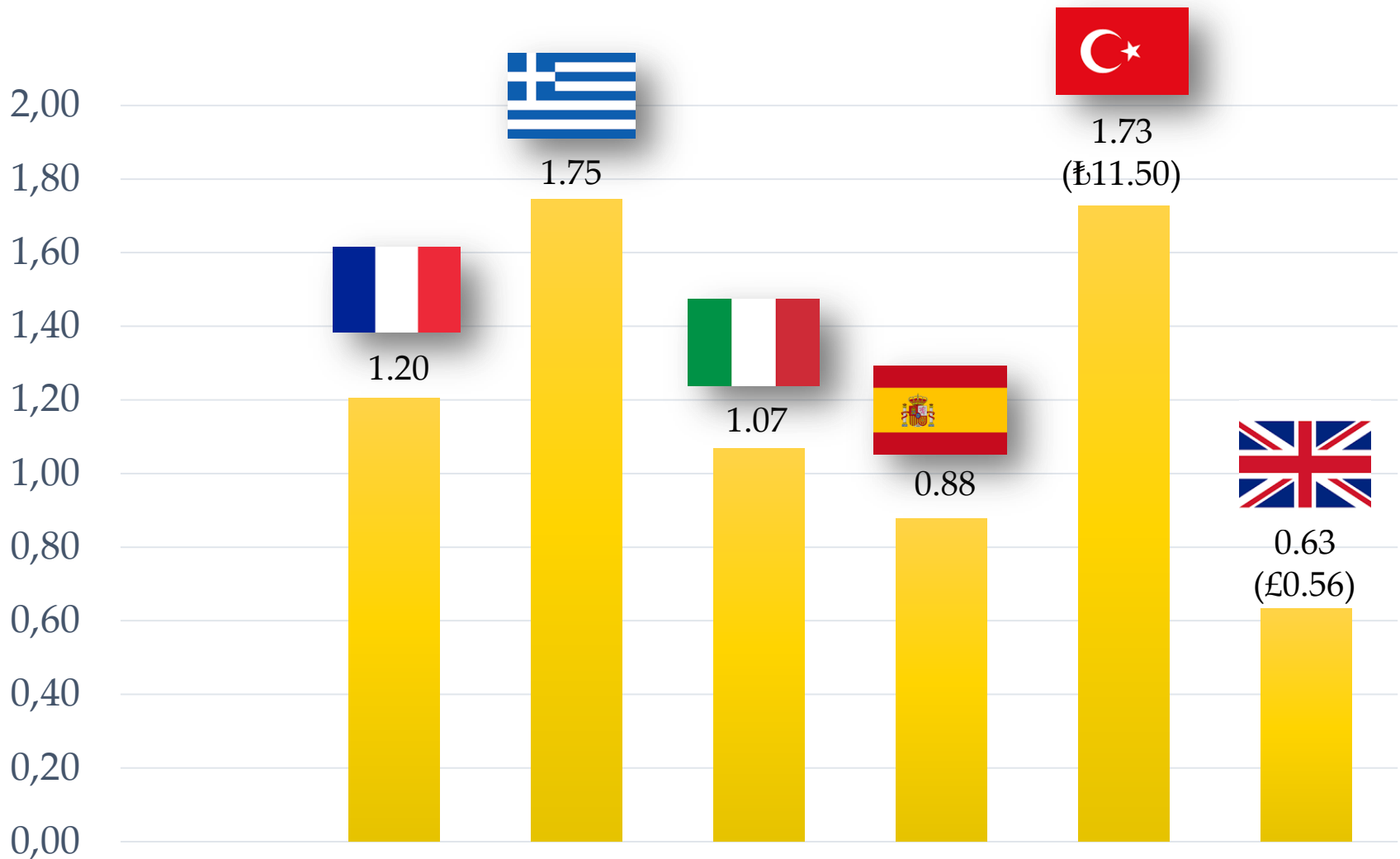
WTP National origin



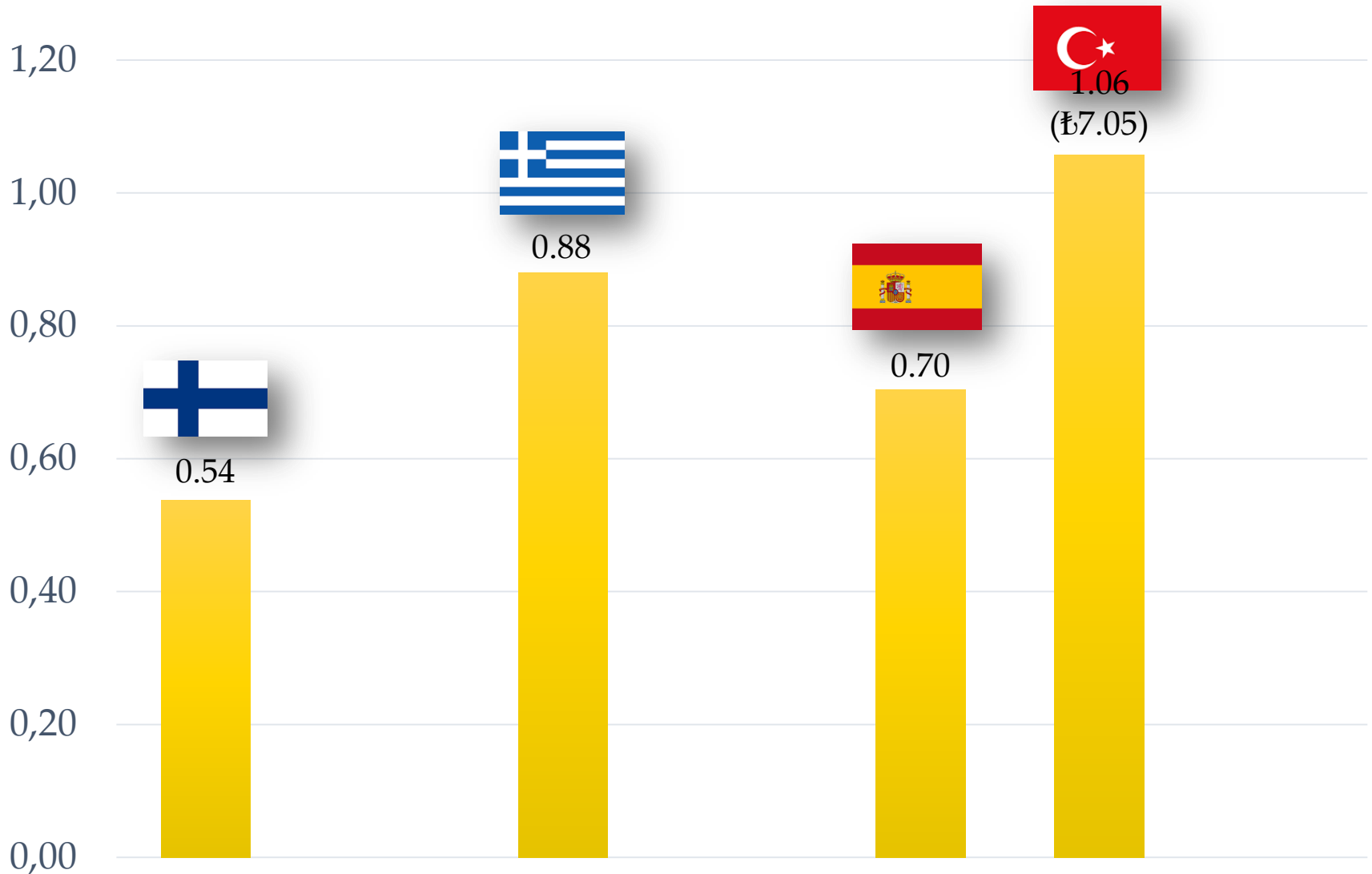
WTP EU origin



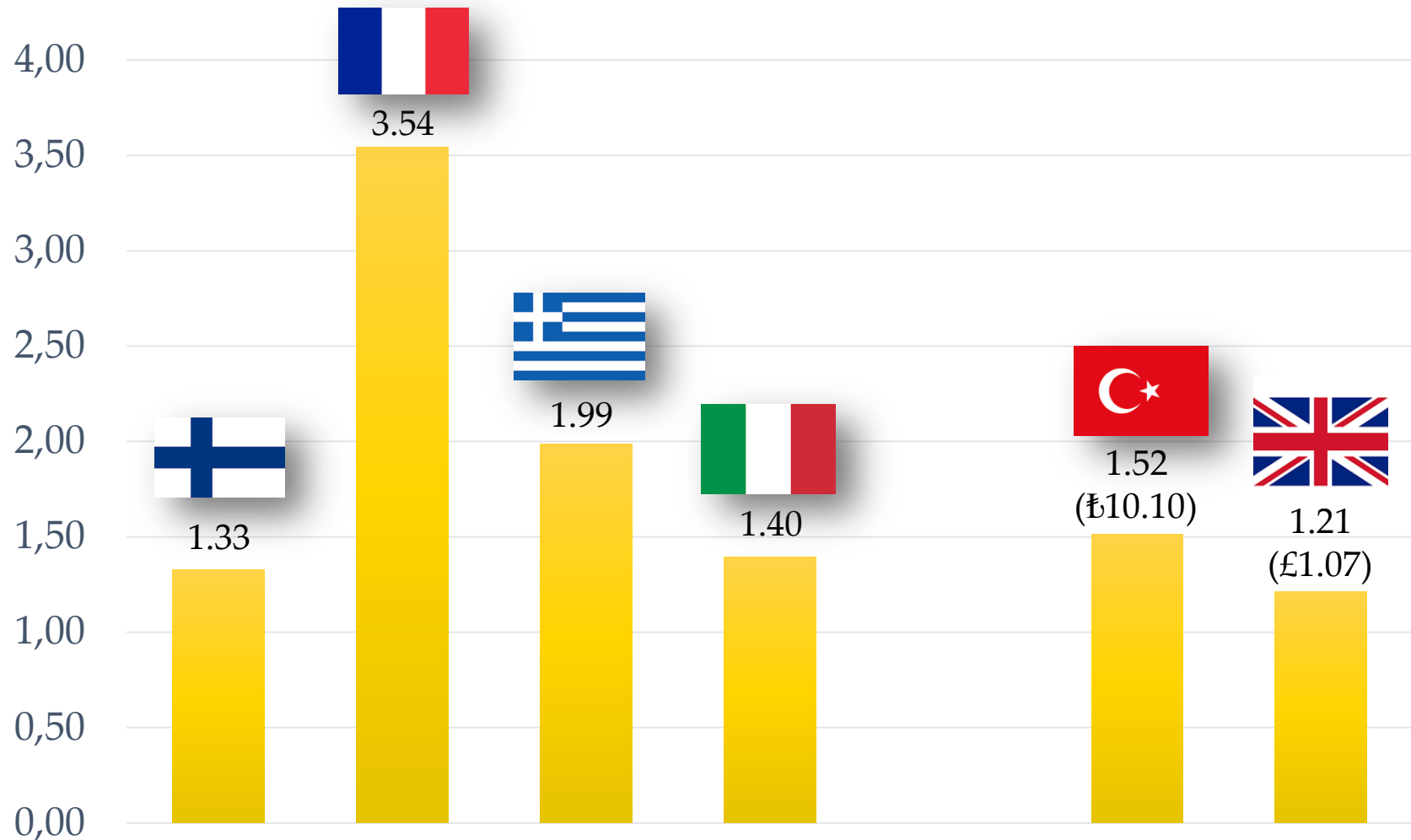
WTP PGI/PDO



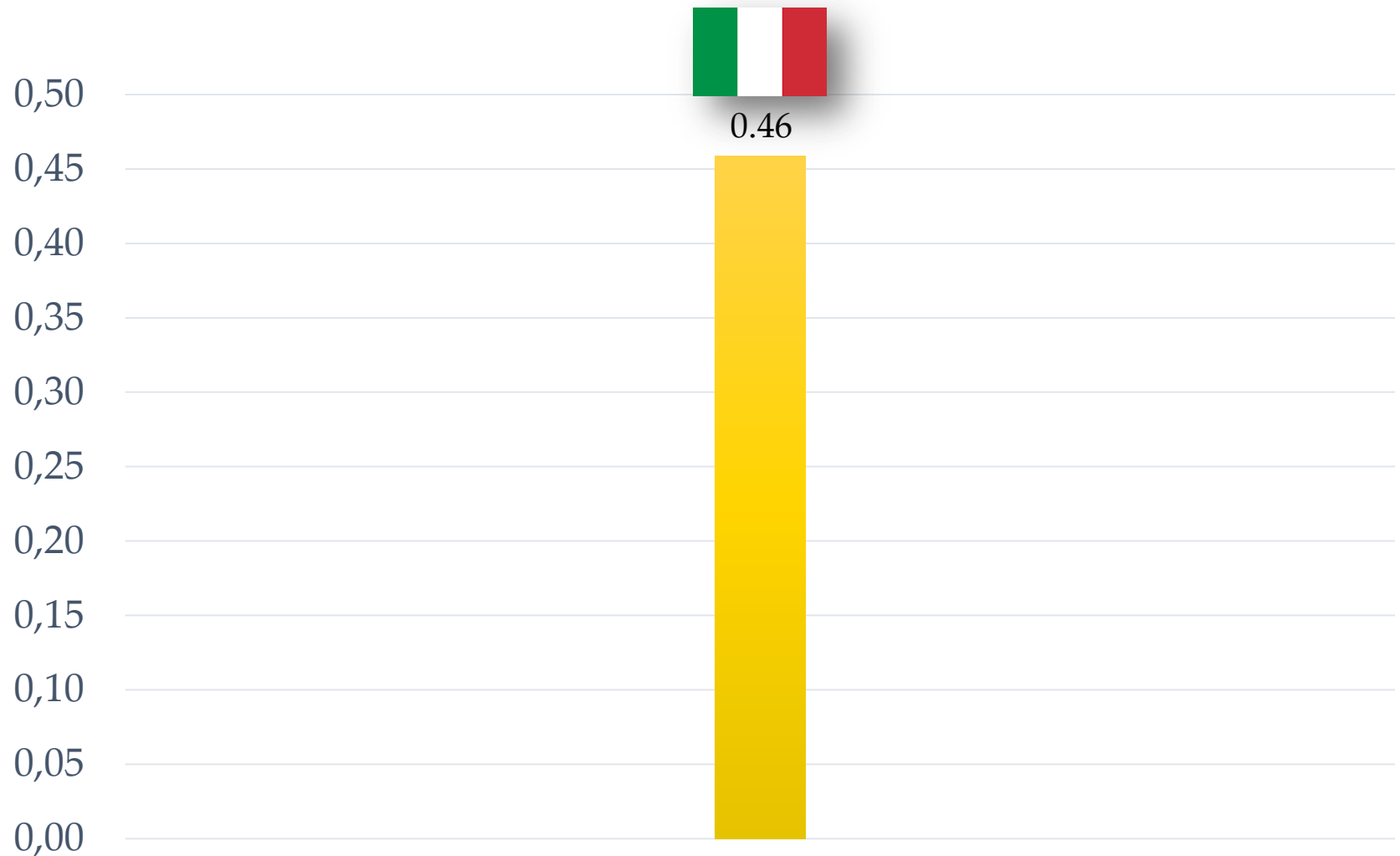
WTP Carbon label



WTP Organic label



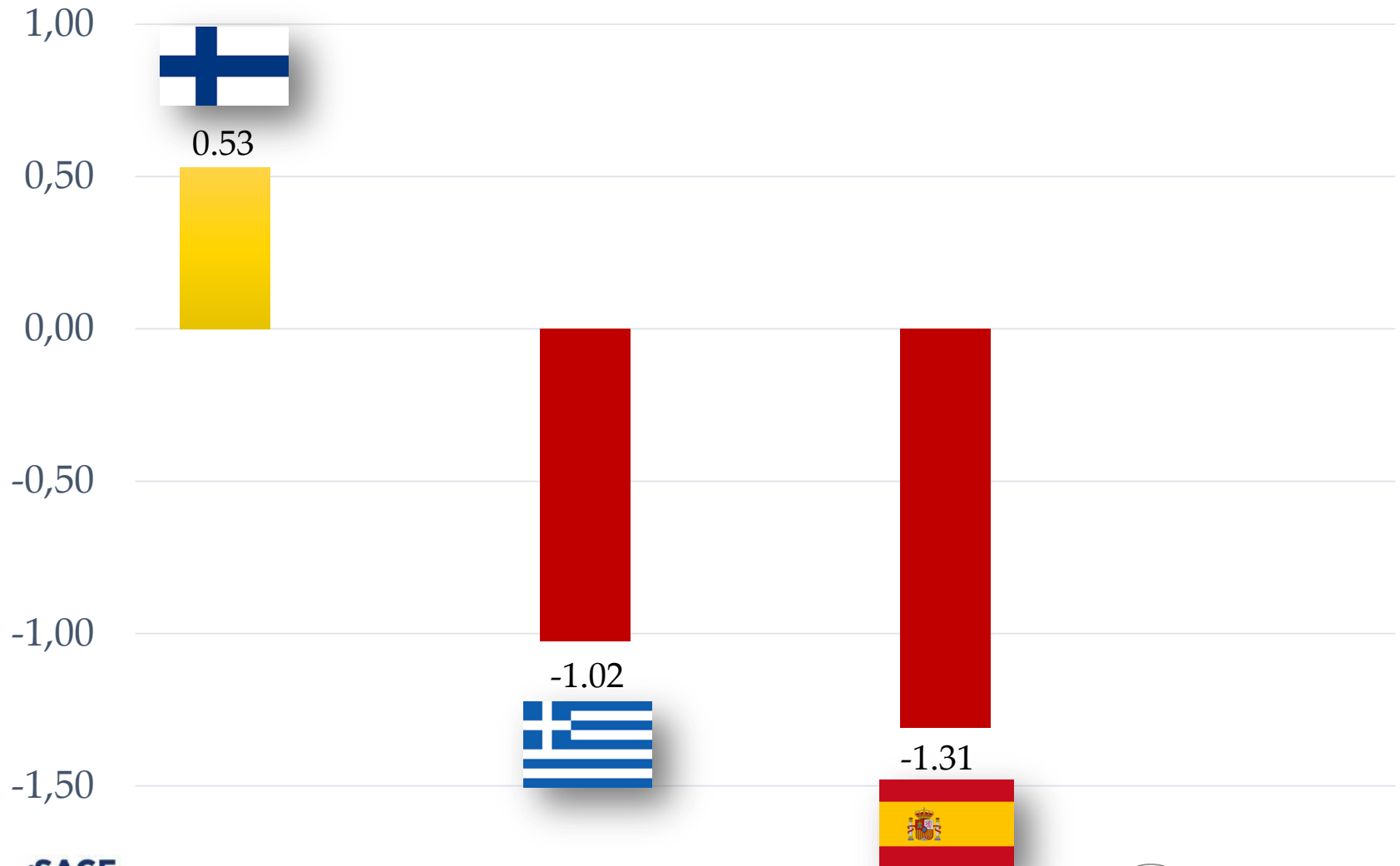
WTP Less fatty



WTP High protein content



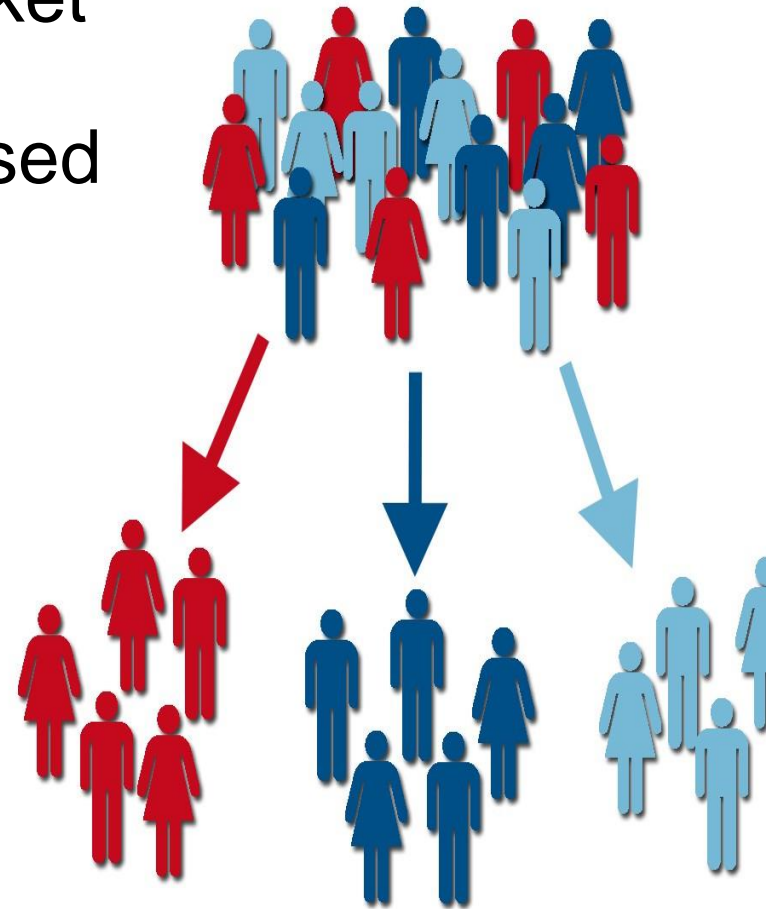
WTP Ready to cook



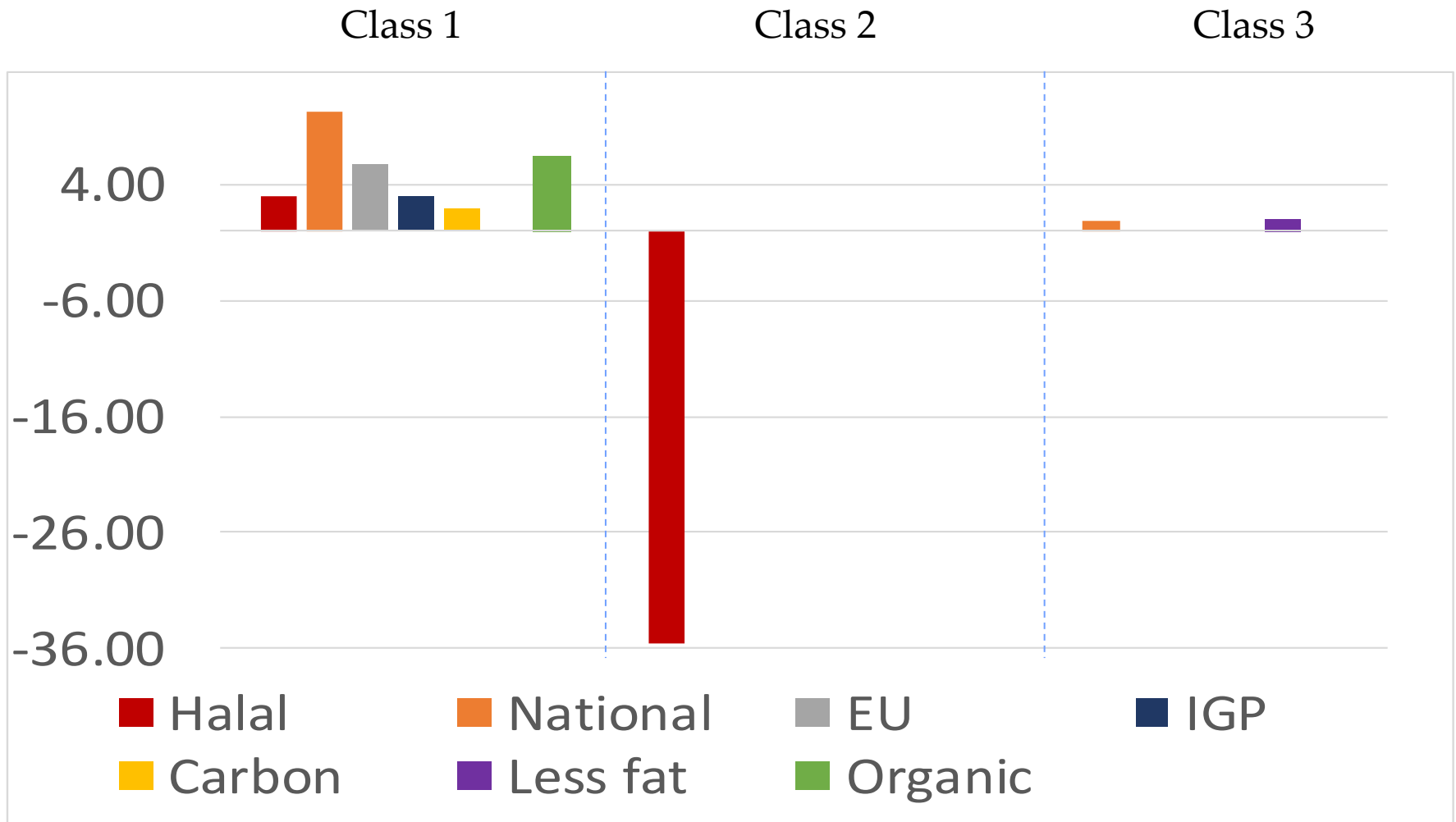
Market Segmentation

The process of dividing a market of potential customers into homogeneous sub-groups based on different characteristics.

1. Latent class choice experiment → most important attributes and willingness to pay (WTP)
2. Regress the class probability by sociodemographic, behavioral, knowledge and psychographic variables



WTP – France



Market Segmentation - France

	Socio-demographic	Behaviour	Psicographics	Main attributes
Young hipsters (51%)	18-24 years old	Eat lamb at restaurants. No shoulder, buys at the butcher	Healthy motives, organic LS, no concerns on quality/price, neophilic	National, Organic, EU
«Front Nationale» (14%)	45-54 years old	No lamb steak, buys at the farmer	Looks for taste, neophobic	No Halal
Bargainers (35%)	55-64 years old, no kids, low income	No restaurant, no butcher, not for guests, prefer shoulder	Price/quality attentive, no organic LS, no healthy motives	National and less fat

Sheep/goat meat summary findings

- Countries have heterogeneous preferences between and within them.
- Most important attributes are origin (National is preferred over EU or abroad), Organic, and IGP/PDO label
- Preferences on attributes as Halal label, Ready to cook format, High protein and fat content depends on the consumer segment.

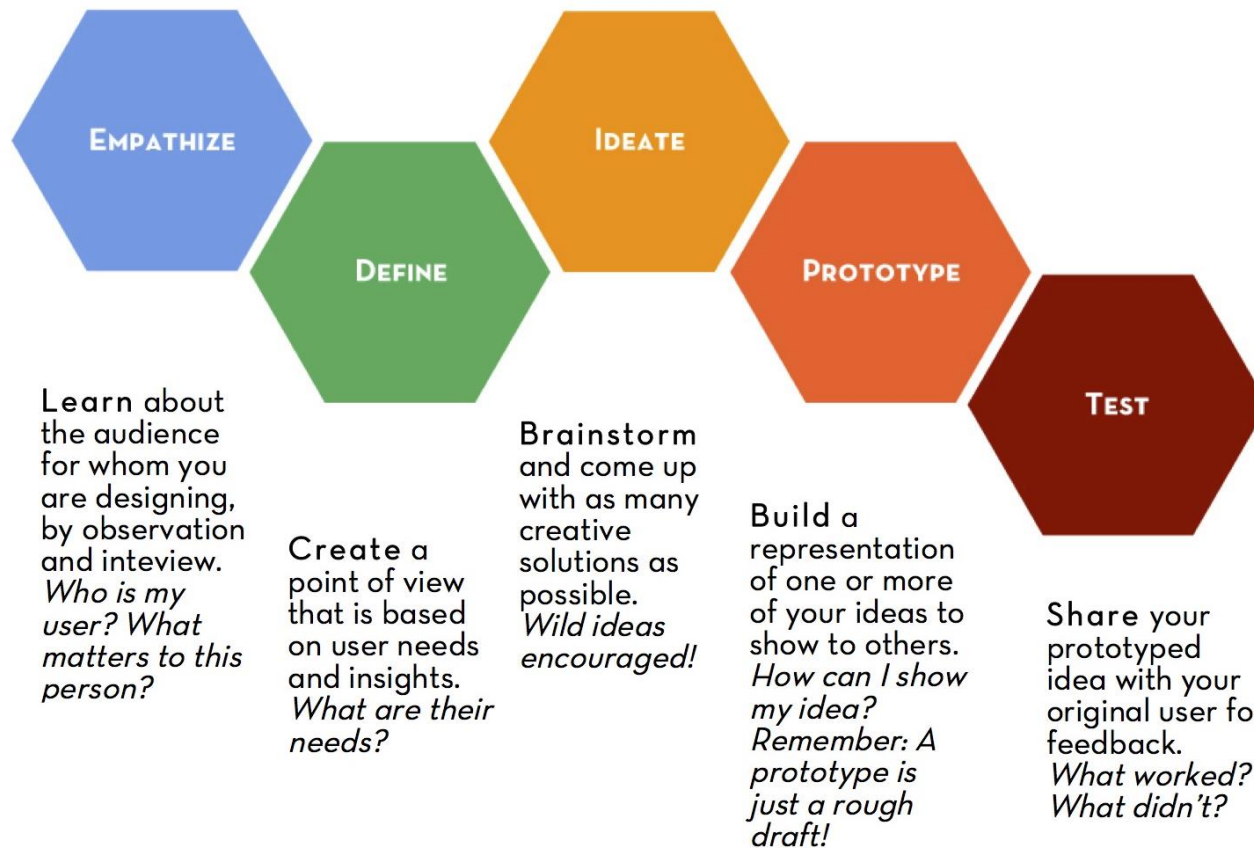
Developing and testing new products/recipes/cuts



How to develop new products

- Focusing innovation on people needs
- Design new products/services etc. based on:
 - What people need and want
 - What people like or dislike
 - In regards to production, packaging, marketing, retailing, support, or all of them

We are all DESIGNERS!



What to look for

- Add
- **S**ubstitute
- **C**ombine
- **A**dapt
- **M**odify (significantly)
- **P**ut to new/other uses
- **E**liminate
- **S**implify

New recipes and restaurant menus

- In most countries, Master Chef and similar TV show are increasingly popular.
- Using chefs with new recipes and menus is a great way to popularize sheep/goat products and to make them more 'trendy'
- Events with cooking shows are great occasion to both promote and test new products/menus/recipes

Testing new products

- Lab experiments:
 - Sensory panels
 - Acceptability testing
 - Other lab experiments
- Field studies:
 - Experiments in real contexts:
 - Supermarkets, shops
 - Restaurant
 - Homes
 - Surveys

Restaurant taste event

Siamo un'osteria.
Amiamo esaltare i sapori semplici.
Siamo una vineria.

Vogliamo soddisfare
i piaceri dei nostri ospiti.

Siamo un'azienda.

Fedeli alla tradizione gastronomica e
confidando nella nostra terra, il
Piemonte, vogliamo guidarvi in
un'esperienza sensoriale unica.



MENÙ 21 Settembre 2018

ANTIPASTO

Battuta d'agnello di razza Broghna con ricotta della sua pecora e cipolle di Tropea

La pecora Broghna è una razza ovina autoctona della montagna veronese (la Lessinia), di cui si usa tutta carne, latte e lana. L'allevamento, che qui ha luogo, è di tipo "pascolo" e "pastorale", in cui si utilizza esclusivamente l'alimento di erba. L'animale è stato sottoposto a una selezione.

PRIMO

Brasato di agnello di razza Broghna, su sugo di agnello
brasato di razza Broghna.

Il Baito del Bosco è una piccola azienda che produce formaggi ovi-caprini e pratica l'allevamento di
capre semi-brade in area protetta della Lessinia. Il brasato di agnello è un'antica tecnica di cottura,
che permette di utilizzare tutto il corpo dell'animale, regale dell'animale utilizzandolo tutto e senza fare spreco.

SECONDO

Agnello nostrano piemontese al forno con patate, ginepro e rosmarino

L'agnello viene da una piccola azienda locale di Barge, piccola comune del Cuneese, che pratica
l'allevamento della razza ovina nostrale Piemontese. Si tratta di una razza a prevalente attitudine
alla produzione di carne, allevata con il sistema transumante, che utilizza l'alpeggio montano
d'estate.

DOLCE

Cheesecake di ricotta di capra della cascina Aris del Monferrato
con guarnitura di crema di Langa di Altalanga a base di nocciola bio

Nelle terre del Monferrato astigiano, la Cascina Aris produce formaggi di latte di capre di razza
Camosciata delle Alpi, allevate rispettando il loro benessere con l'utilizzo di pascoli e di foraggio
verde, senza trattamenti farmacologici in via preventiva e in strutture a basso impatto ambientale.

45 € / bevande incluse



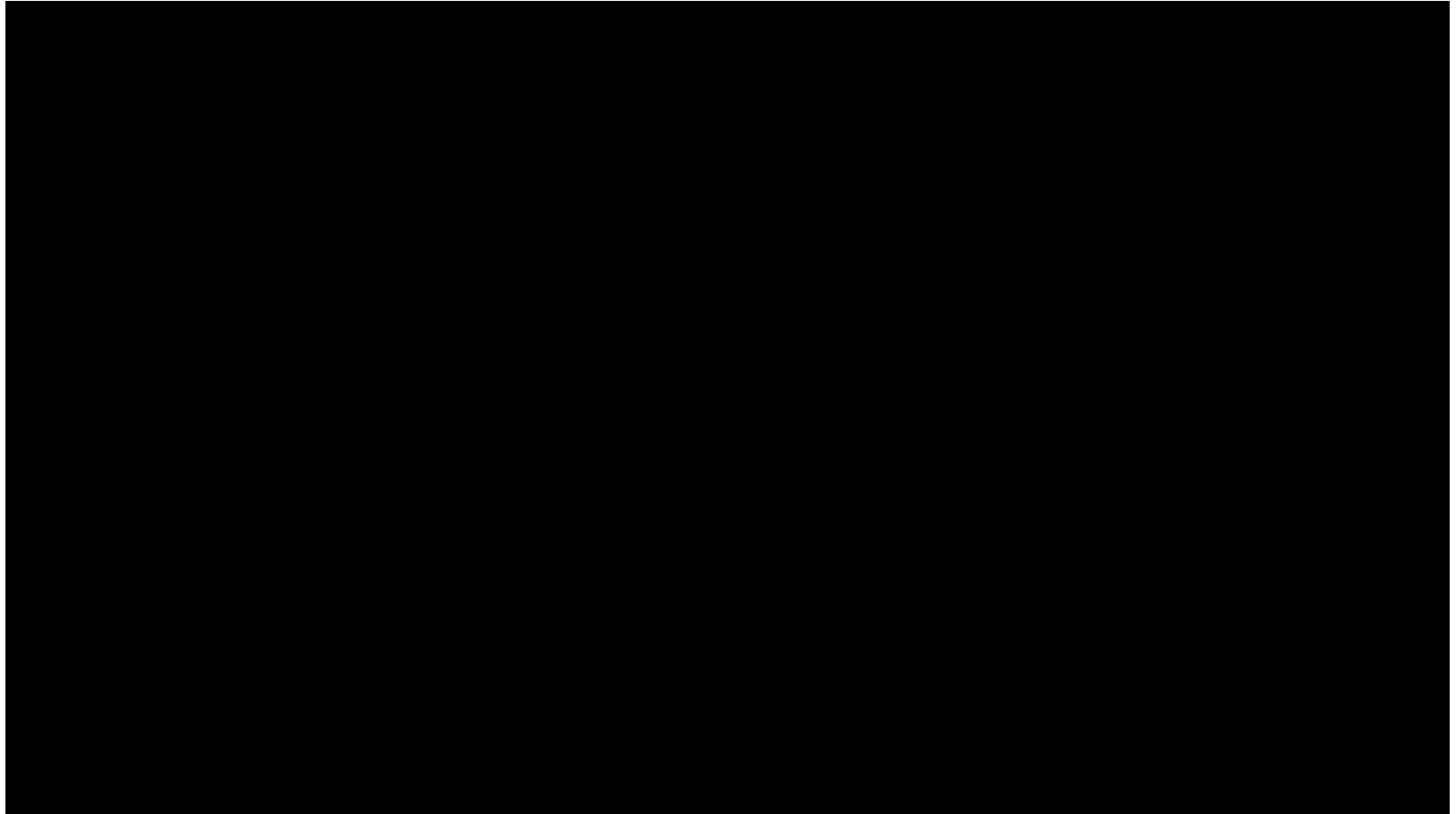
In the kitchen



Filling in questionnaires



Slow Meat taste Lab at Terramadre 2018






zanoli@agrecon.univpm.it

Choice experiment design for cheese

Attributes	Aged cheese A	Aged cheese B	Fresh cheese A	Fresh cheese B
Milk source	<ul style="list-style-type: none"> •Ewe •Goat •Cow •Mixed 	<ul style="list-style-type: none"> •Ewe •Goat •Cow •Mixed 	<ul style="list-style-type: none"> •Ewe •Goat •Cow •Mixed 	<ul style="list-style-type: none"> •Ewe •Goat •Cow •Mixed
Pasteurised	<ul style="list-style-type: none"> •Pasteurised •Raw 	<ul style="list-style-type: none"> •Pasteurised •Raw 	<ul style="list-style-type: none"> •Pasteurised •Raw 	<ul style="list-style-type: none"> •Pasteurised •Raw
Rennet	<ul style="list-style-type: none"> •Animal rennet •Non animal rennet 	<ul style="list-style-type: none"> •Animal rennet •Non animal rennet 	<ul style="list-style-type: none"> •Animal rennet •Non animal rennet 	<ul style="list-style-type: none"> •Animal rennet •Non animal rennet
Salt content	<ul style="list-style-type: none"> •Low salt •None 	<ul style="list-style-type: none"> •Low salt •None 	<ul style="list-style-type: none"> •Low salt •None 	<ul style="list-style-type: none"> •Low salt •None
Organic	<ul style="list-style-type: none"> •Organic •None 	<ul style="list-style-type: none"> •Organic •None 	<ul style="list-style-type: none"> •Organic •None 	<ul style="list-style-type: none"> •Organic •None
Origin	<ul style="list-style-type: none"> •National •EU 	<ul style="list-style-type: none"> •National •EU 	<ul style="list-style-type: none"> •National •EU 	<ul style="list-style-type: none"> •National •EU
PDO/PGI	<ul style="list-style-type: none"> •PDO •None 	<ul style="list-style-type: none"> •PDO •None 	<ul style="list-style-type: none"> •PDO •None 	<ul style="list-style-type: none"> •PDO •None
Price	<ul style="list-style-type: none"> •Average price •-25% •+25% 	<ul style="list-style-type: none"> •Average price •-25% •+25% 	<ul style="list-style-type: none"> •Average price •-25% •+25% 	<ul style="list-style-type: none"> •Average price •-25% •+25%

Choice experiment for cheese

Fresh cheese A	
Milk source:	Ewe milk
	Raw milk
	Animal rennet
	-
	-
Origin:	EU
	
Price:	5.57 euro

Aged cheese A	
Milk source:	Ewe milk
	Pasteurized
	Non-animal rennet
	Low salt
	
Origin:	UK
	-
Price:	4.28 euro

Fresh cheese B	
Milk source:	Mixed goat and cow milk
	Raw milk
	Animal rennet
	-
	
Origin:	UK
	-
Price:	3 euro

Aged cheese B	
Milk source:	Mixed goat and cow milk
	Pasteurized
	Non-animal rennet
	Low salt
	-
Origin:	UK
	
Price:	7.95 euro

None	
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Preliminary results: cheese type

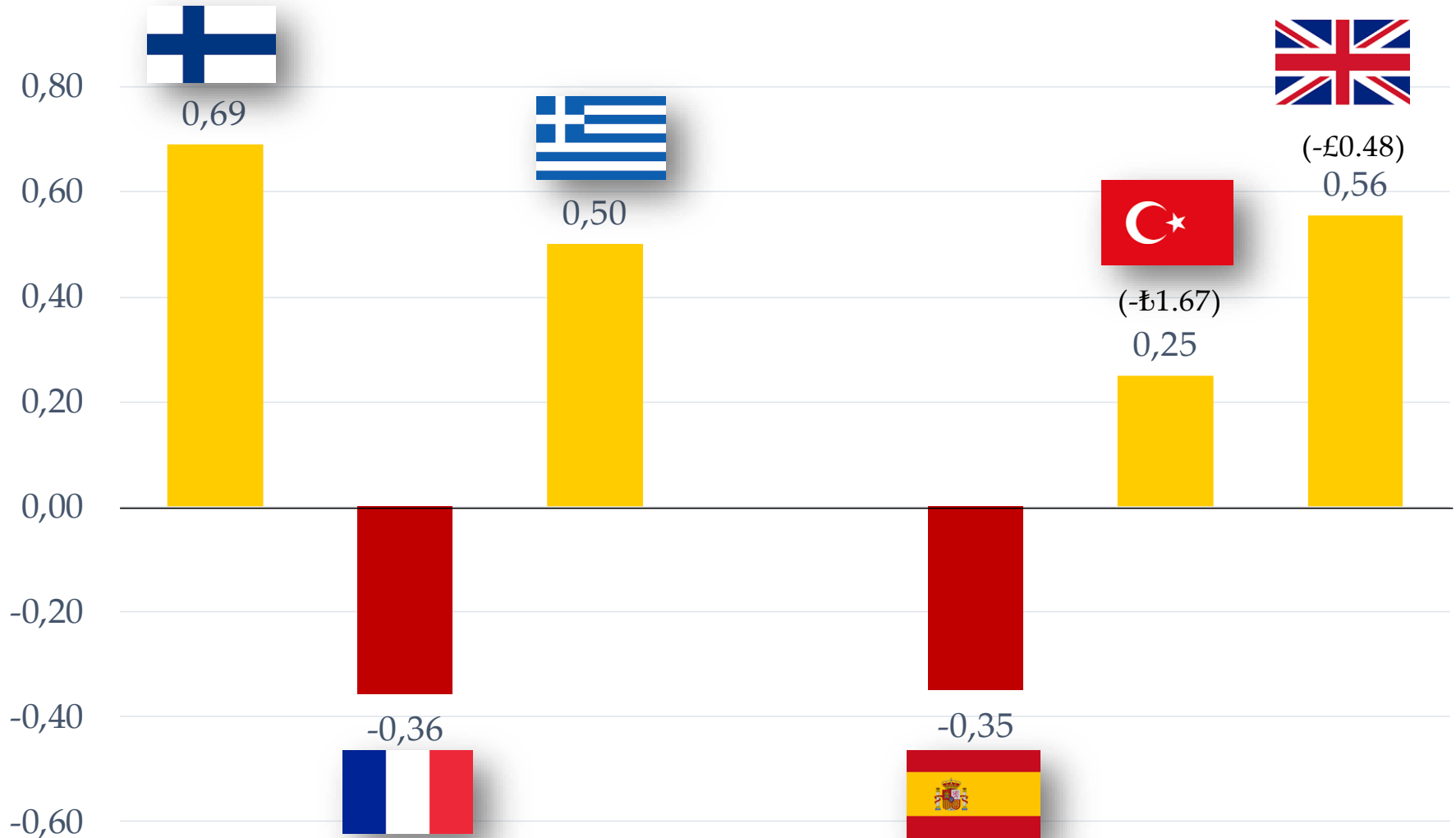
*None is the reference category

Meat	Finland	France	Greece	Italy	Spain	Turkey	UK
None	—	—	—	—	—	—	—
Aged cheese	↑↑	↑↑	↑	↑	↑↑	↑↑	↑
Fresh cheese	↑	↑	↑↑	↑	↑	↑	↑

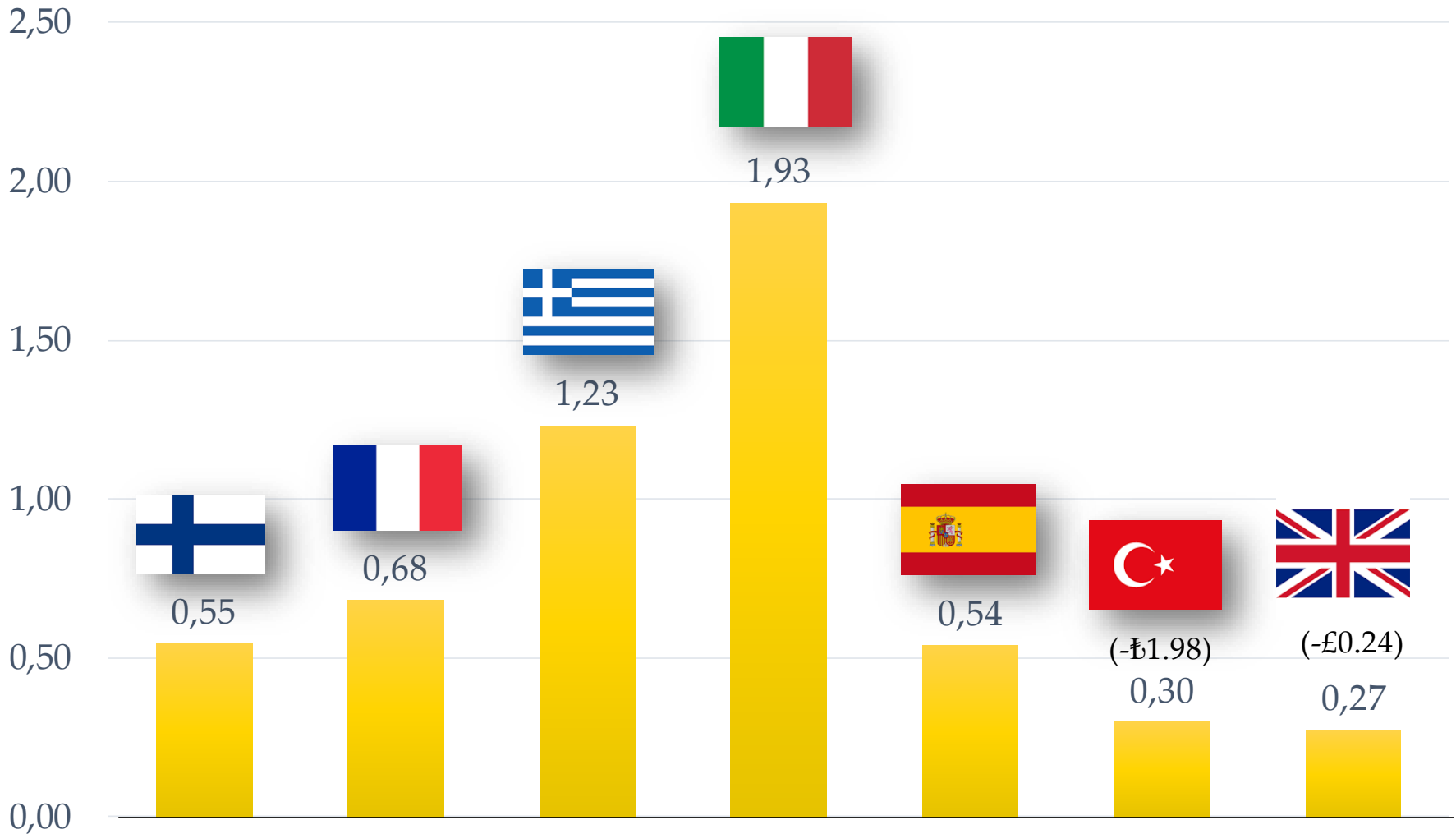
5% significance level



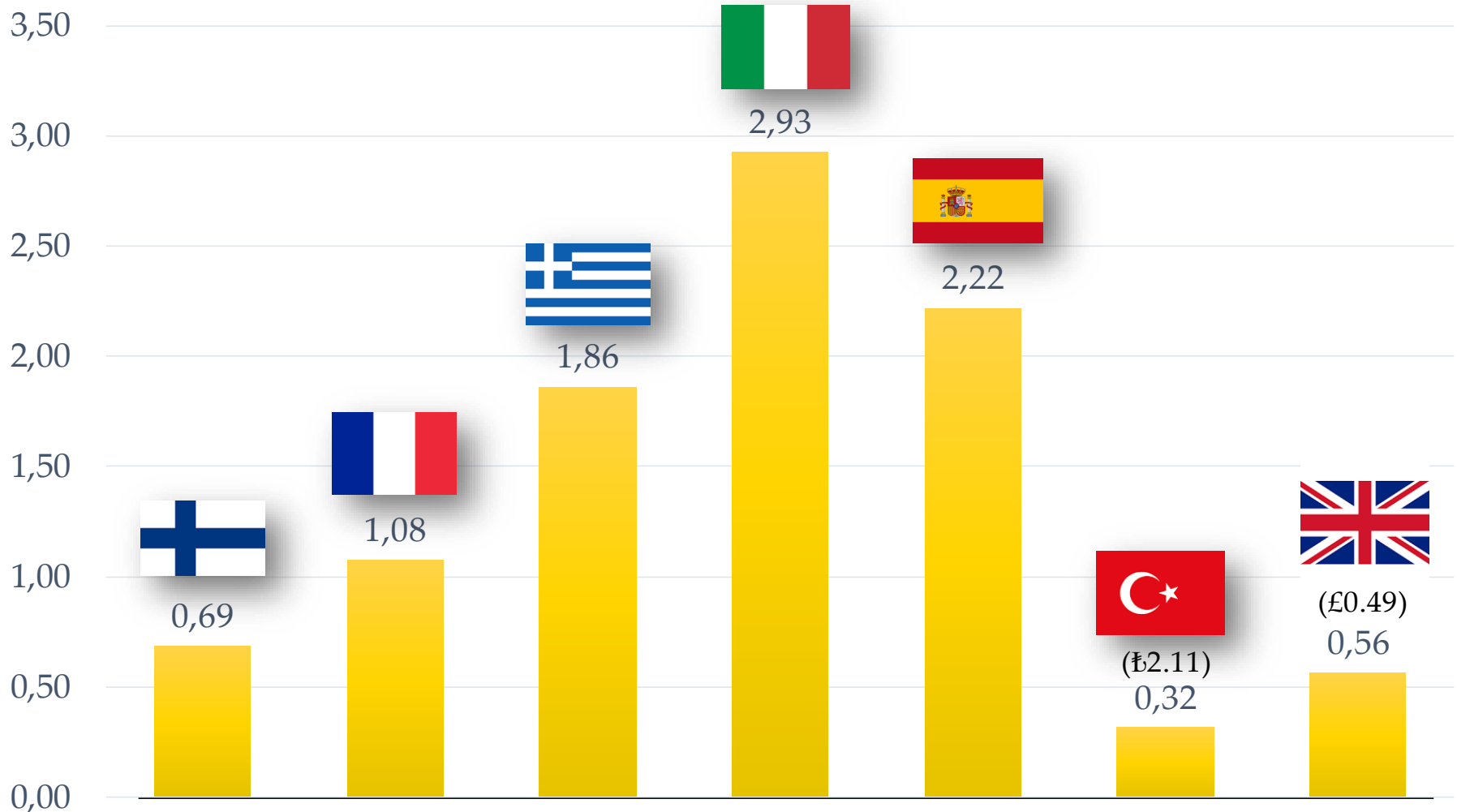
WTP Cow milk



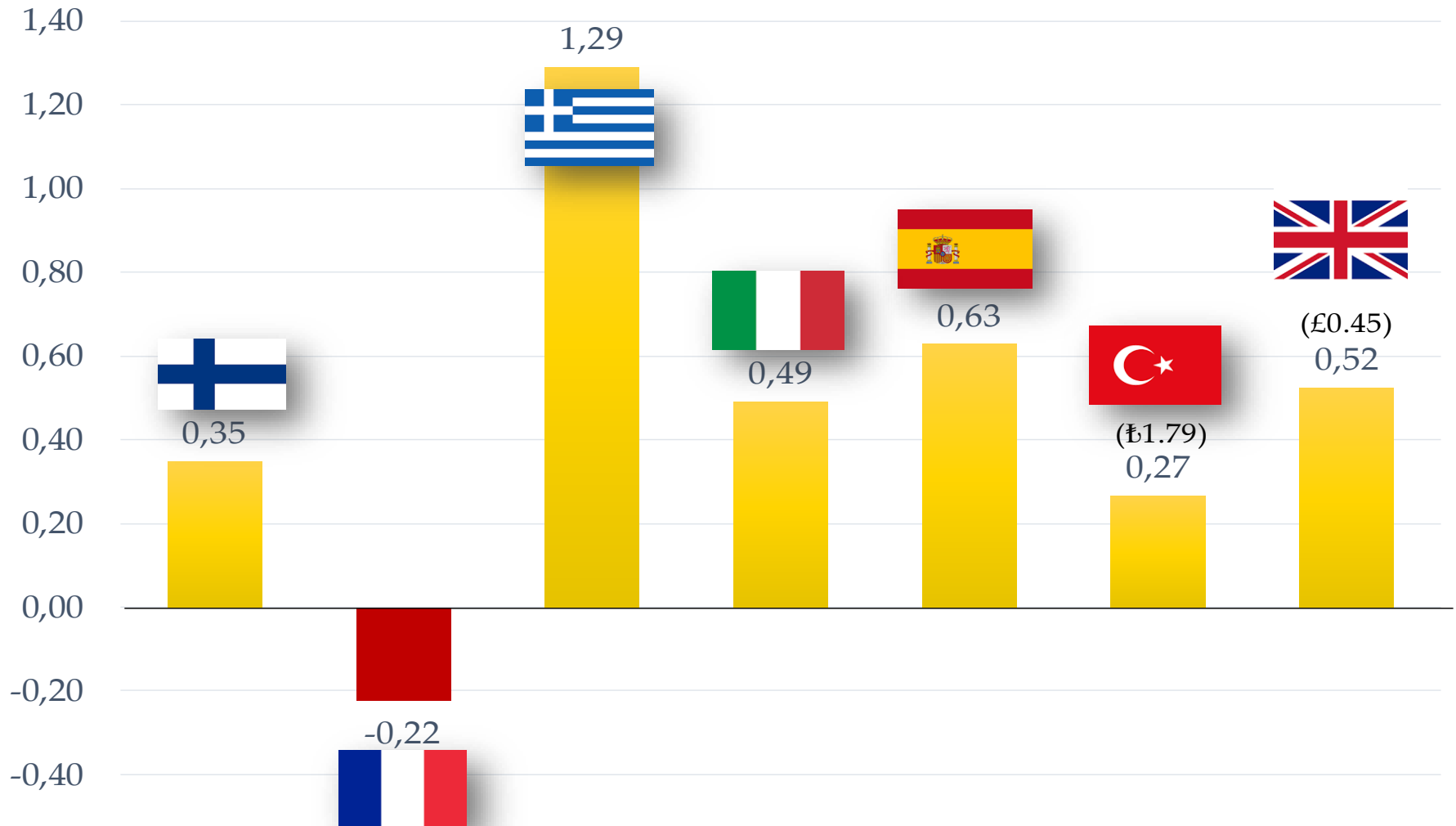
WTP National origin



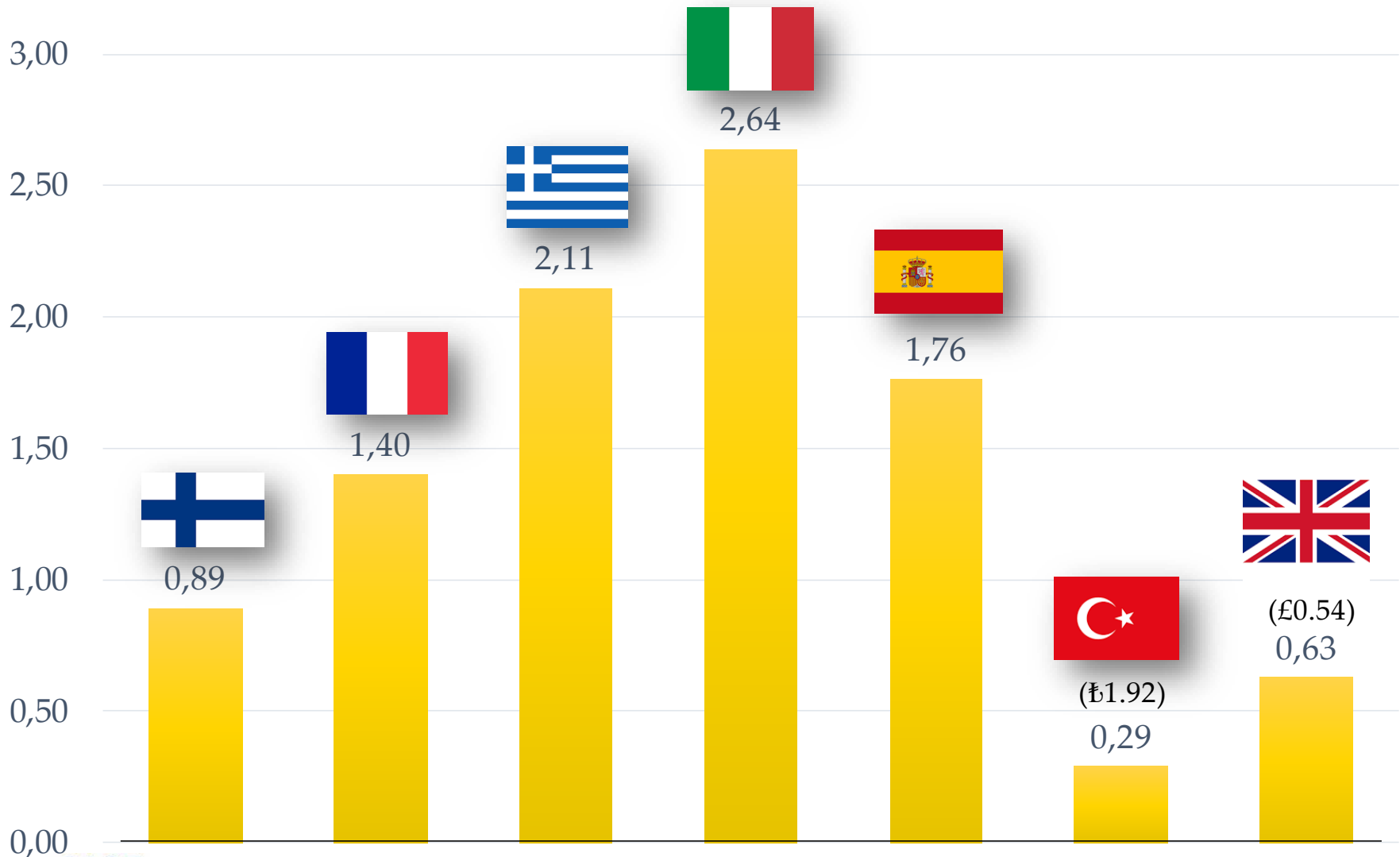
WTP PDO



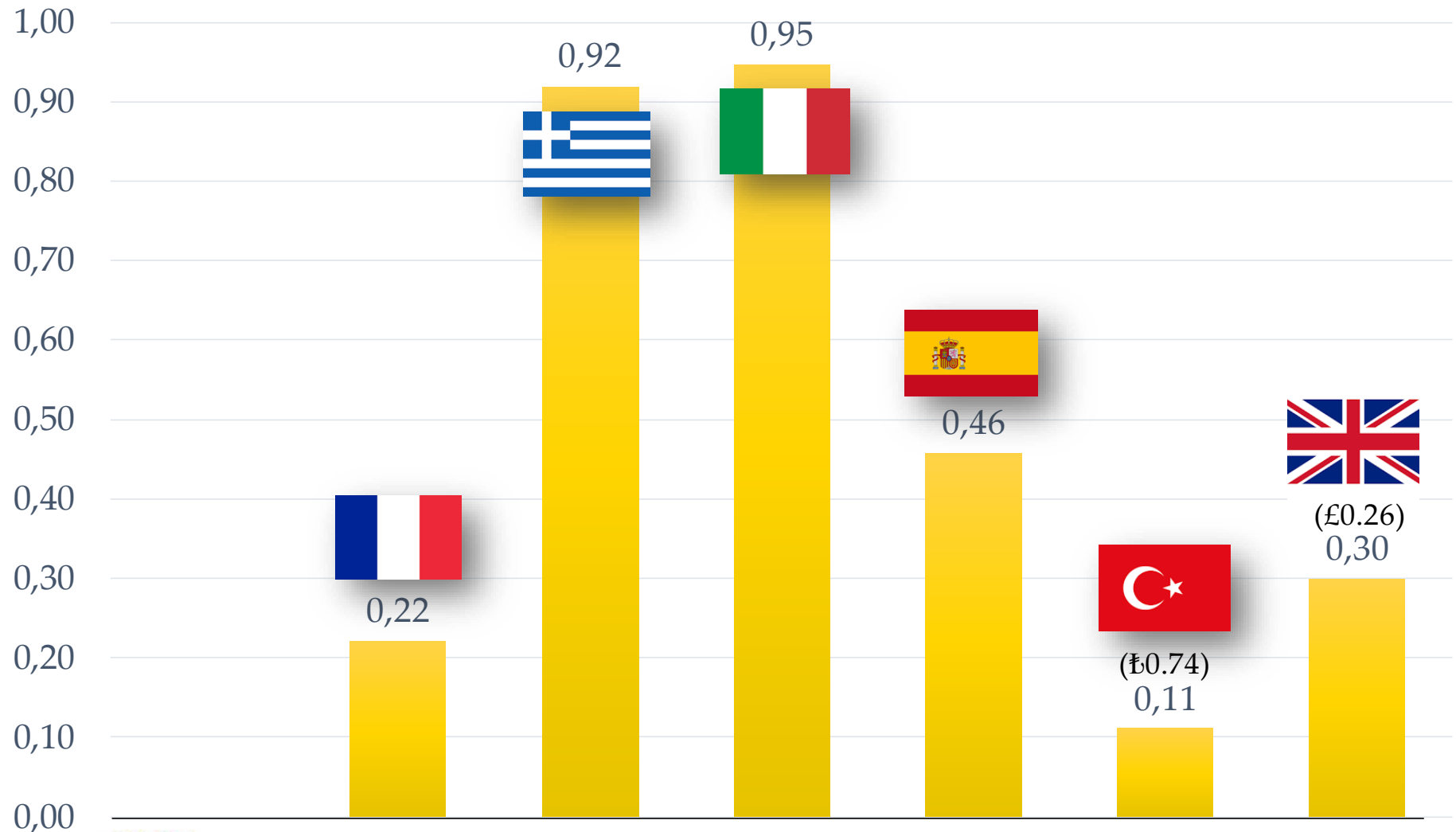
WTP Pasteurization



WTP Organic



WTP Low salt



WTP Vegetable rennet

