



Nutrition labelling in Europe

First results from the FLABEL project

Monique Raats

University of Surrey (UK)

Nutrition labels in Europe



1 portion
30 g

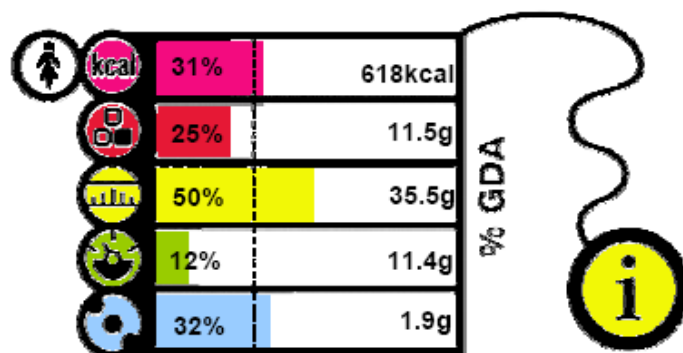
kcal
111
6 %
GDA*



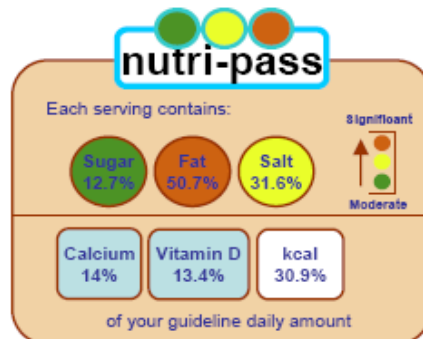
Nutrition information		
Typical values (Cooked as per instructions)	Per 100g	Per pack
Energy	610 kJ 146 kcal	2580 kJ 618 kcal
Protein	4.8g	20.3g
Carbohydrates of which sugars of which starch	12.8g 2.7g 10.1g	54.1g 11.4g 42.7g
Fat of which saturates mono-unsaturates polyunsaturates	8.4g 3.8g 3.5g 1.1g	35.5g 16.1g 14.8g 4.7g
Fibre	2.0g	8.5g
Salt of which sodium	0.5g 0.2g	1.9g 0.8g



PER PACK		
Low	Fat	4.3g
Low	Saturates	2.0g
MED	Salt	1.60g
Low	Sugars	6.0g
Calories		275



*DER NÄHRSTOFFKOMPASS/CDU/VDR/RNJ/DV/GDA



MED	LOW	MED	MED	MED
Calories	Sugar	Fat	Sat Fat	Salt
212	1.1g	8.3g	2.4g	0.7g
11%	1%	12%	12%	12%



EU-funded Project

- FLABEL (Food Labelling to Advance Better Education for Life)
- 7th Framework Programme
- Start: 1 August 2008 (3 years)

Ref: Contract N° 211905

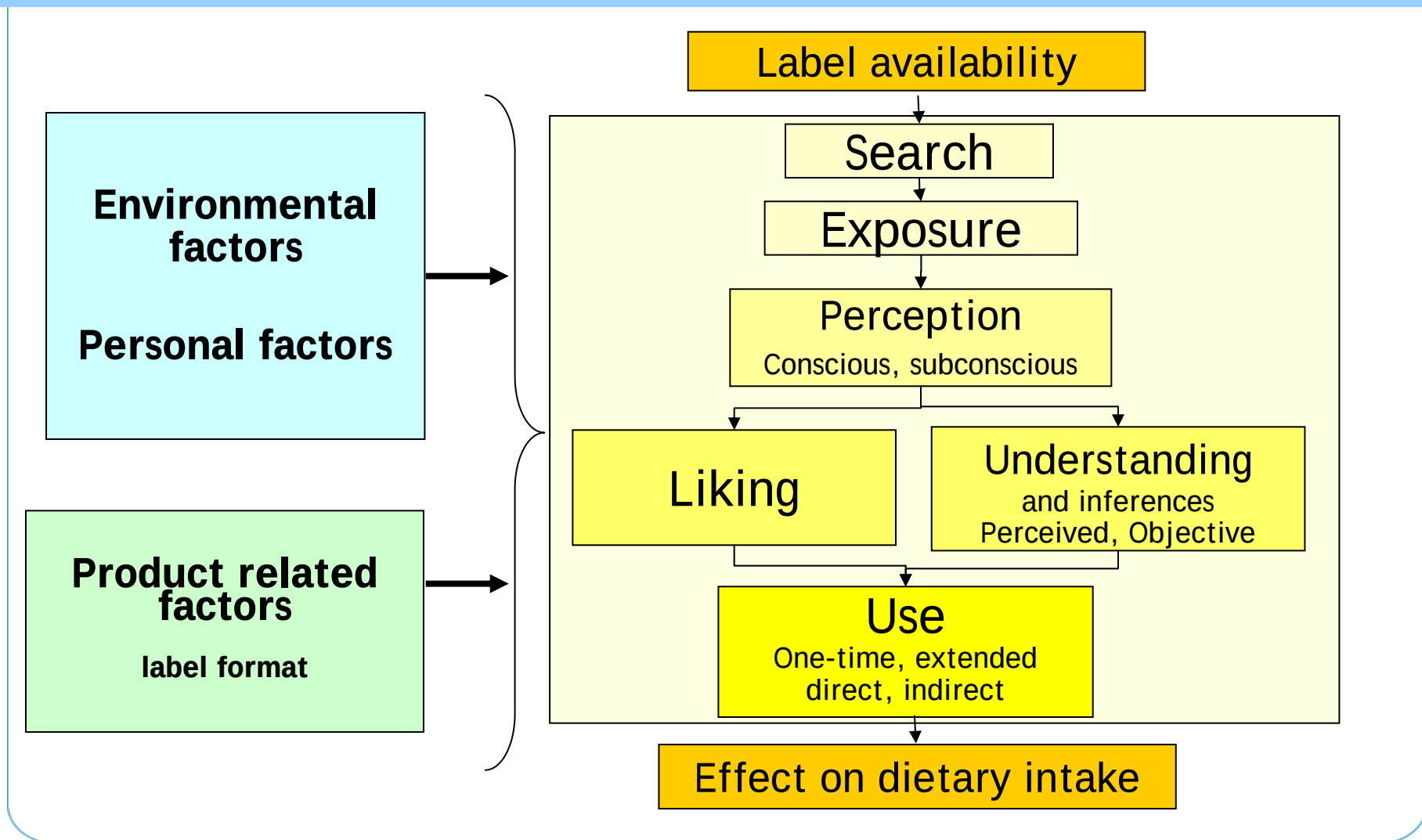
Consortium

- EUFIC, Belgium (Coordinator)
- Aarhus University, Denmark
- Agricultural University of Athens, Greece
- Dokuz Eylul University, Turkey
- Saarland University, Germany
- University of Surrey, United Kingdom
- University of Warsaw, Poland
- Wageningen University, The Netherlands
- University of Göttingen, Germany
- Tesco Stores Ltd, United Kingdom
- EuroCoop, Belgium
- COFACE, Belgium
- UEAPME, Belgium

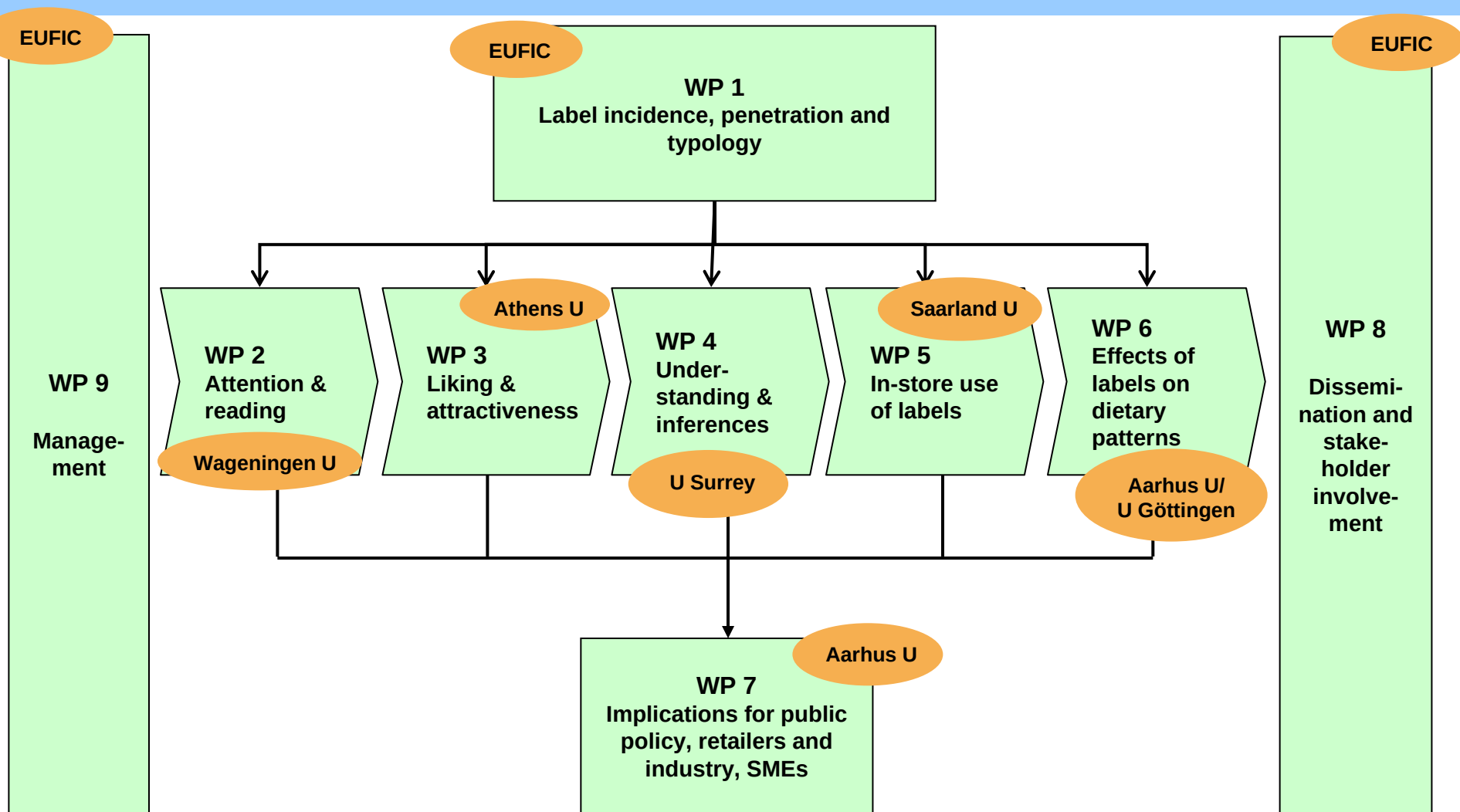
Overall objectives

- Determine how nutrition information on food labels can affect dietary choices, consumer habits and food-related health issues
 - by developing and applying an interpretation framework incorporating both the label and other factors/influences
- Provide the scientific basis on use of nutrition information on food labels
 - including scientific principles for assessing the impact of different food labelling schemes

Conceptual framework



WP Overview

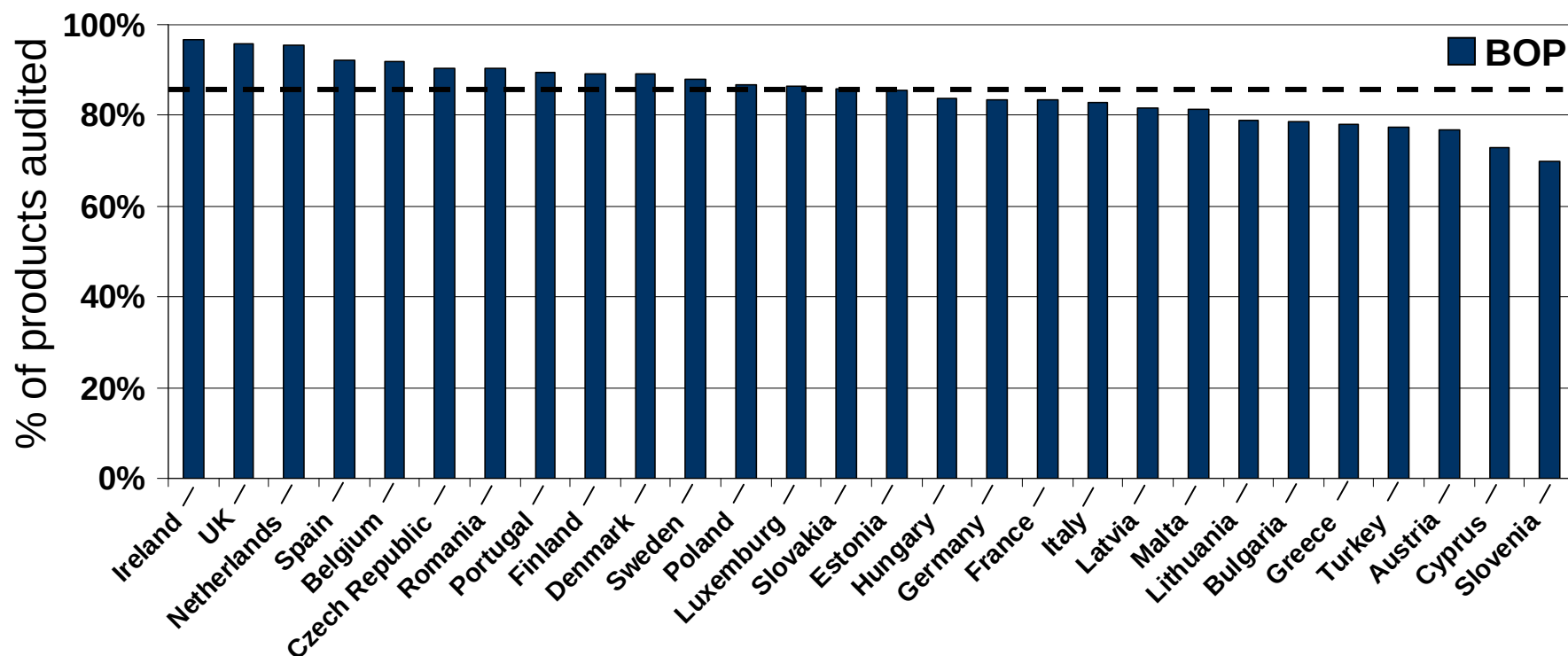


Methods

- 27 EU countries plus Turkey
- 3 retailers per country
 - Top 5, consumer cooperative/national, discounter
- Physical audit of all products in 5 product categories defined by consortium
 - **sweet biscuits (249-788 products)**
 - **breakfast cereals (97-416 products)**
 - **pre-packed fresh ready meals (0-293 products)**
 - **carbonated soft drinks (124-348 products)**
 - **yoghurts (161-667 products)**

Results – Nutrition information

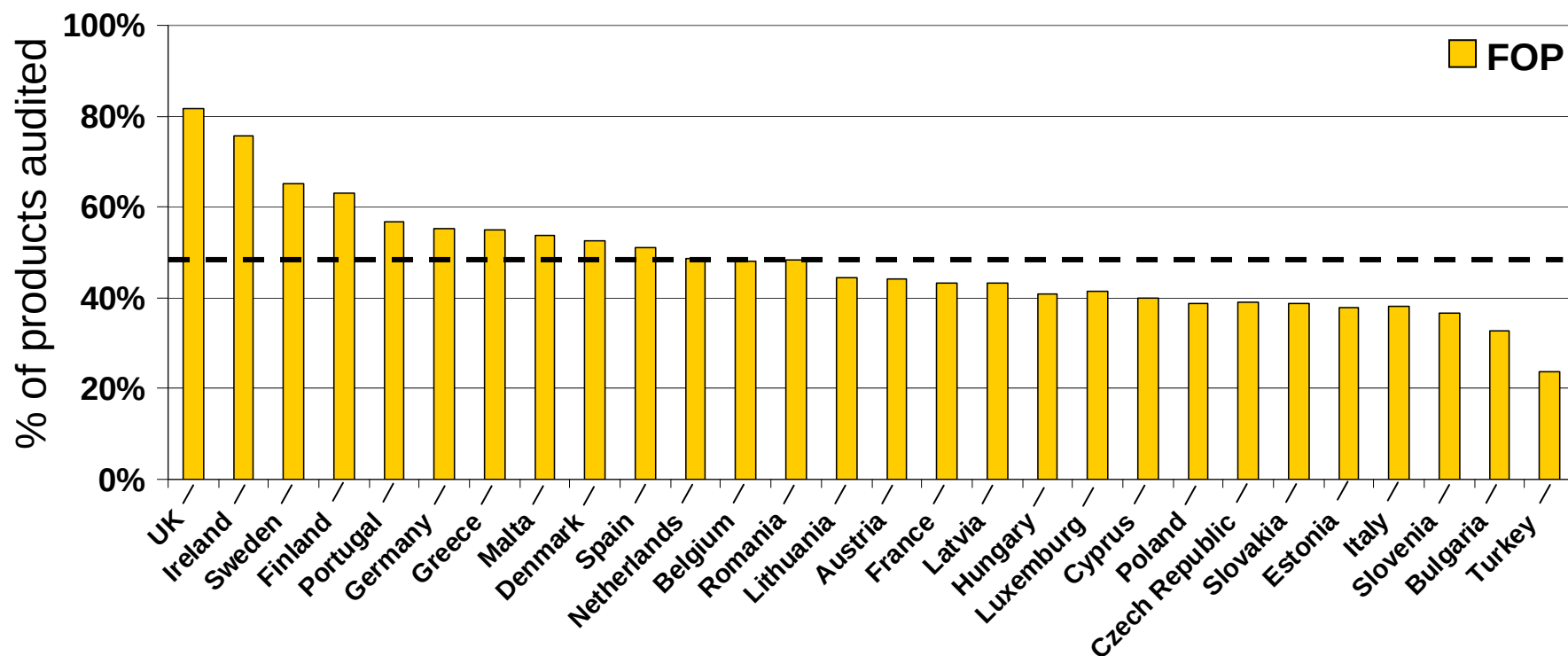
Nutrition information across 5 categories BOP



 **85%** average penetration of **BOP** nutrition information of any kind

Results – Nutrition information

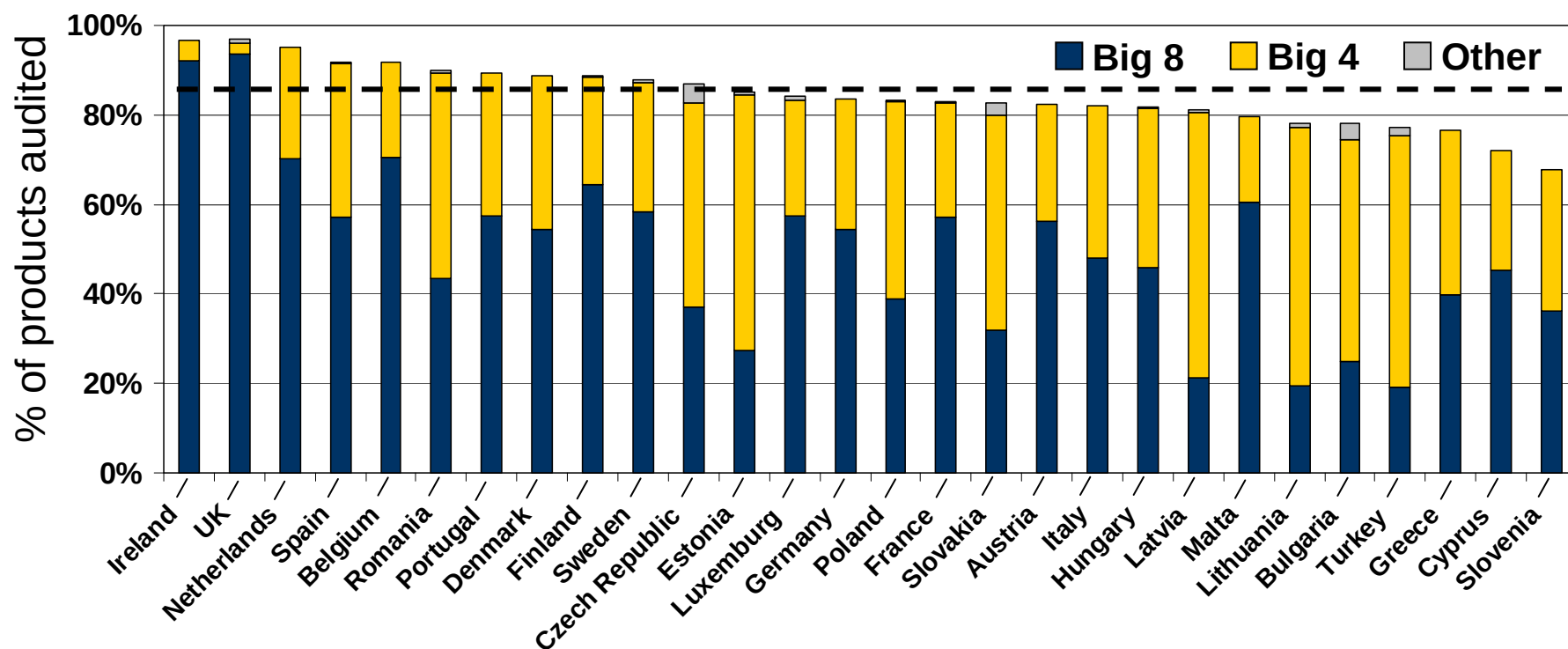
Nutrition information across 5 categories FOP



 **48%** average penetration of **FOP** nutrition information of any kind

Results – Nutrition info tabular/linear

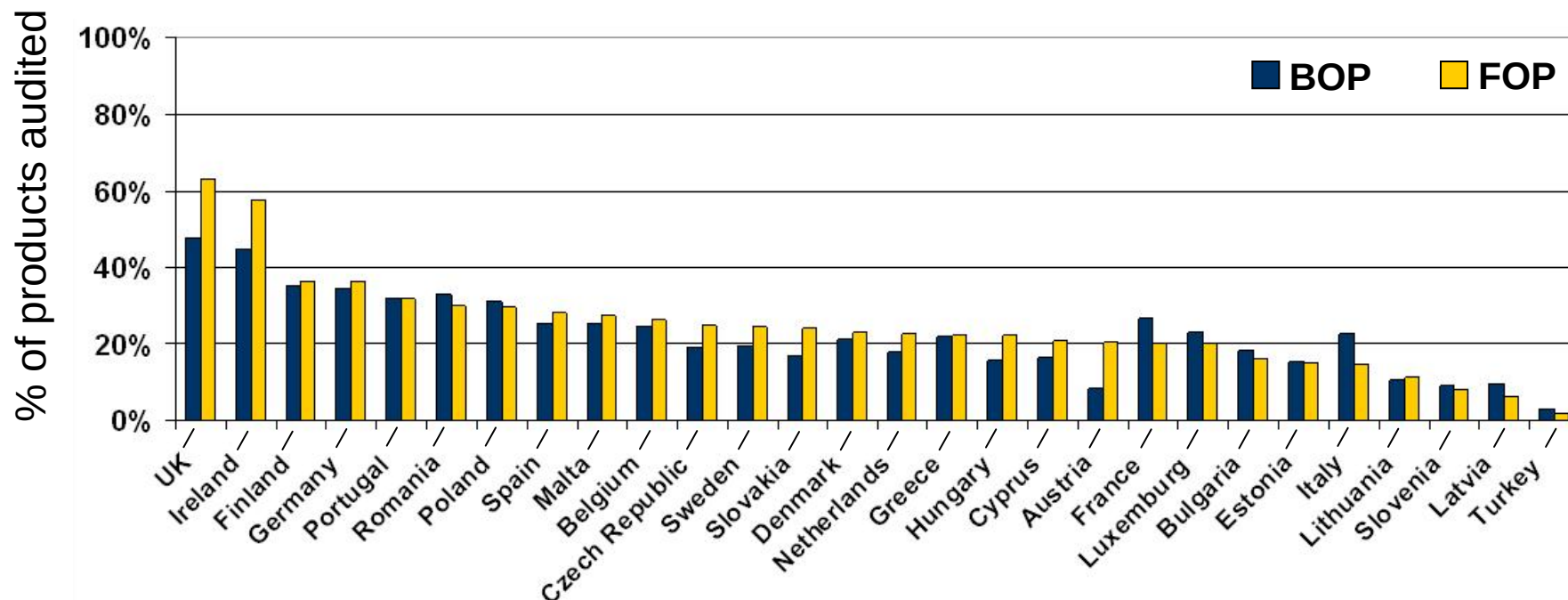
Tabular/linear nutrition information across 5 categories BOP



 **84%** average penetration of **BOP** tabular/linear nutrition info (big 4, big 8)

Results – Guideline Daily Amounts (GDA)

GDA across 5 categories BOP/FOP

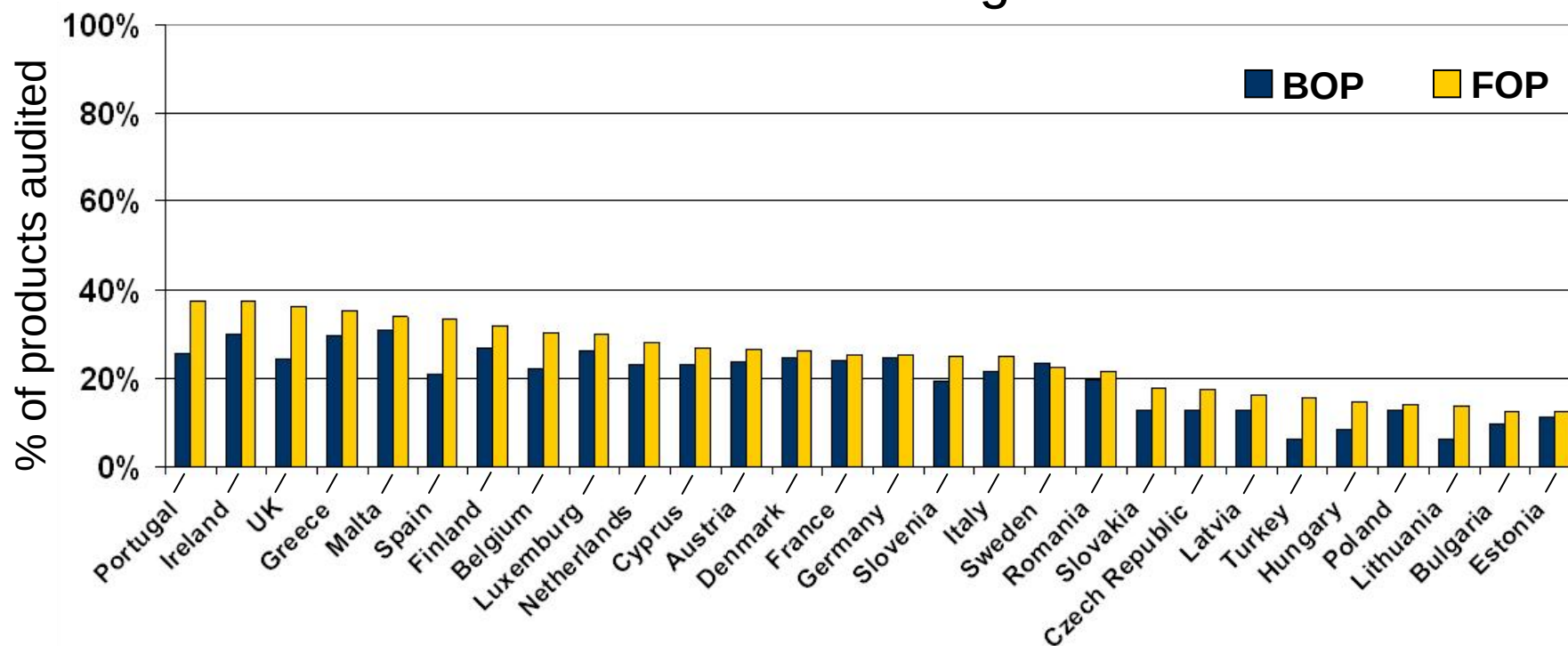


23% average penetration of **BOP** GDA labelling (range: 3-48%)

25% average penetration of **FOP** GDA labelling (range: 2-63%)

Results – Nutrition claims

Nutrition claims across 5 categories BOP/FOP

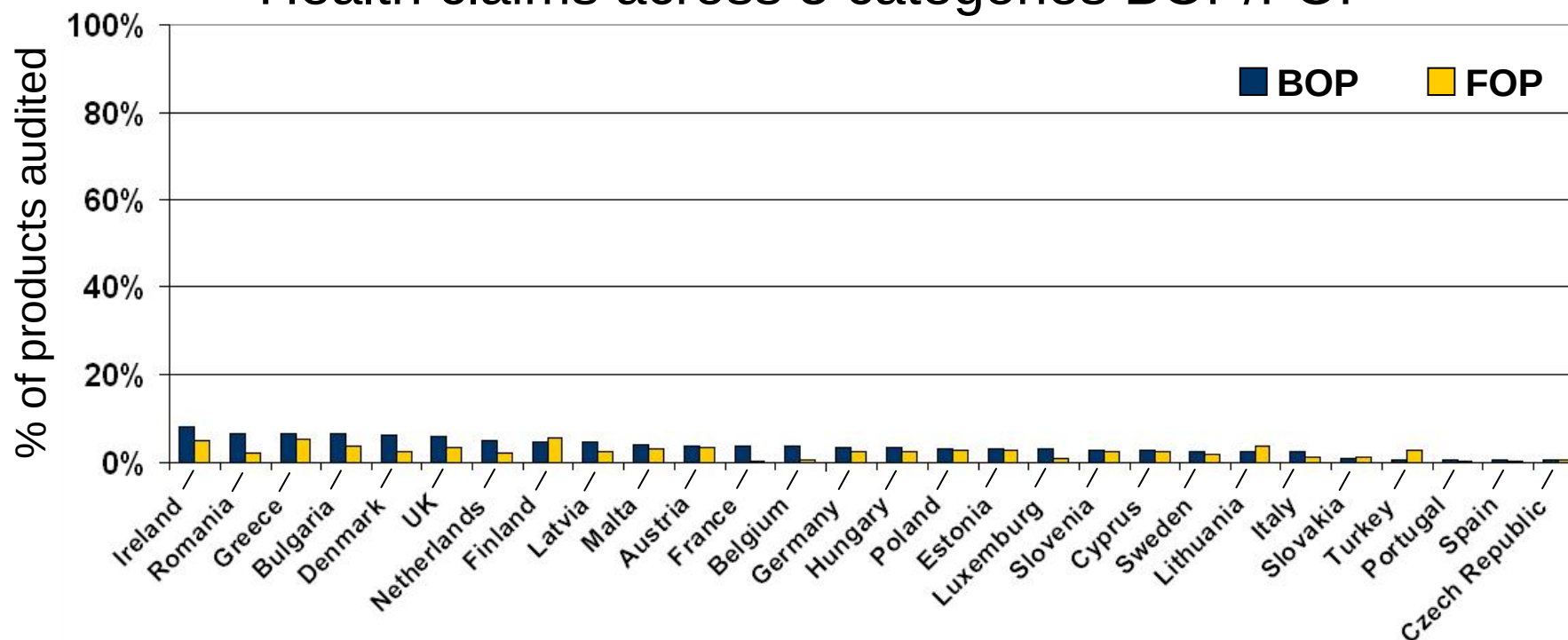


20% average penetration of **BOP** nutrition claims (range: 6-31%)

25% average penetration of **FOP** nutrition claims (range: 12-37%)

Results – Health claims

Health claims across 5 categories BOP/FOP



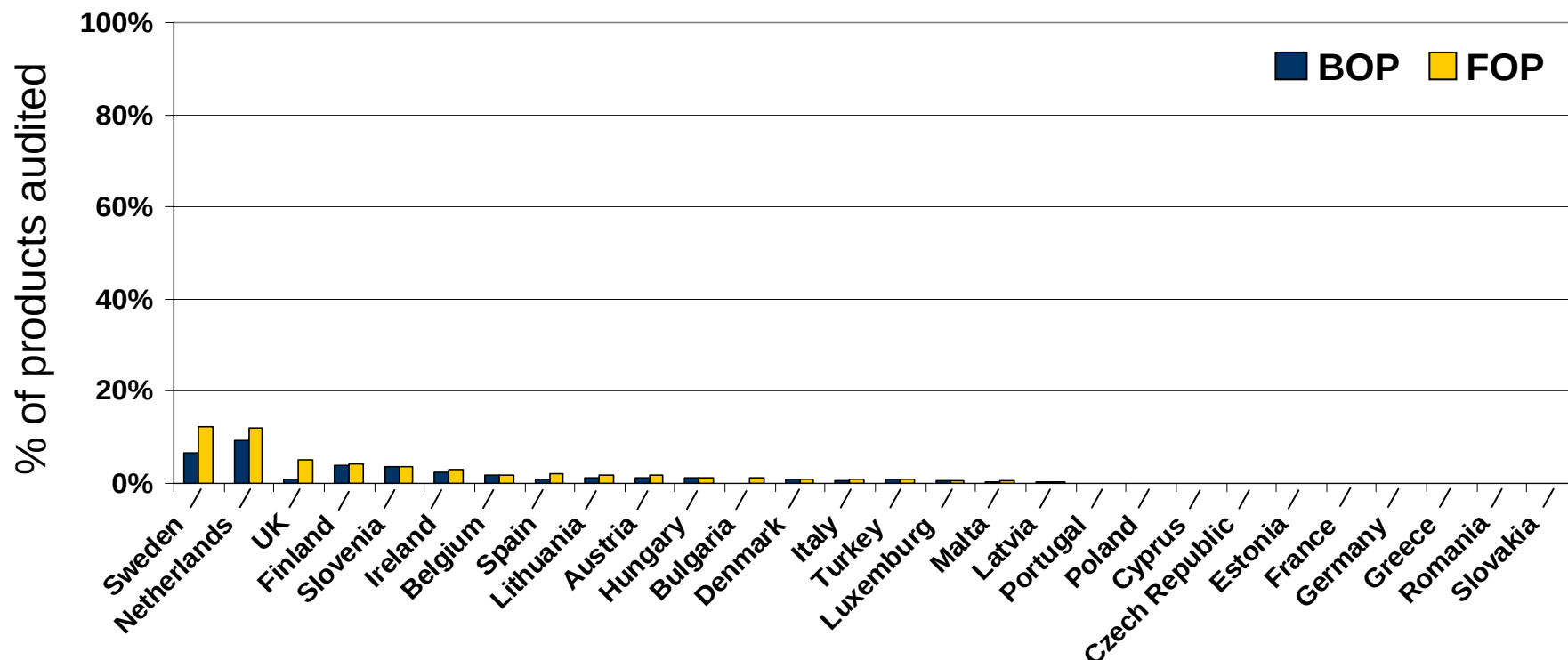
 **4%** average penetration of **BOP** health claims (range: 1-8%)

 **2%** average penetration of **FOP** health claims (range: 0-6%)

Health logos



Health logos across 5 categories

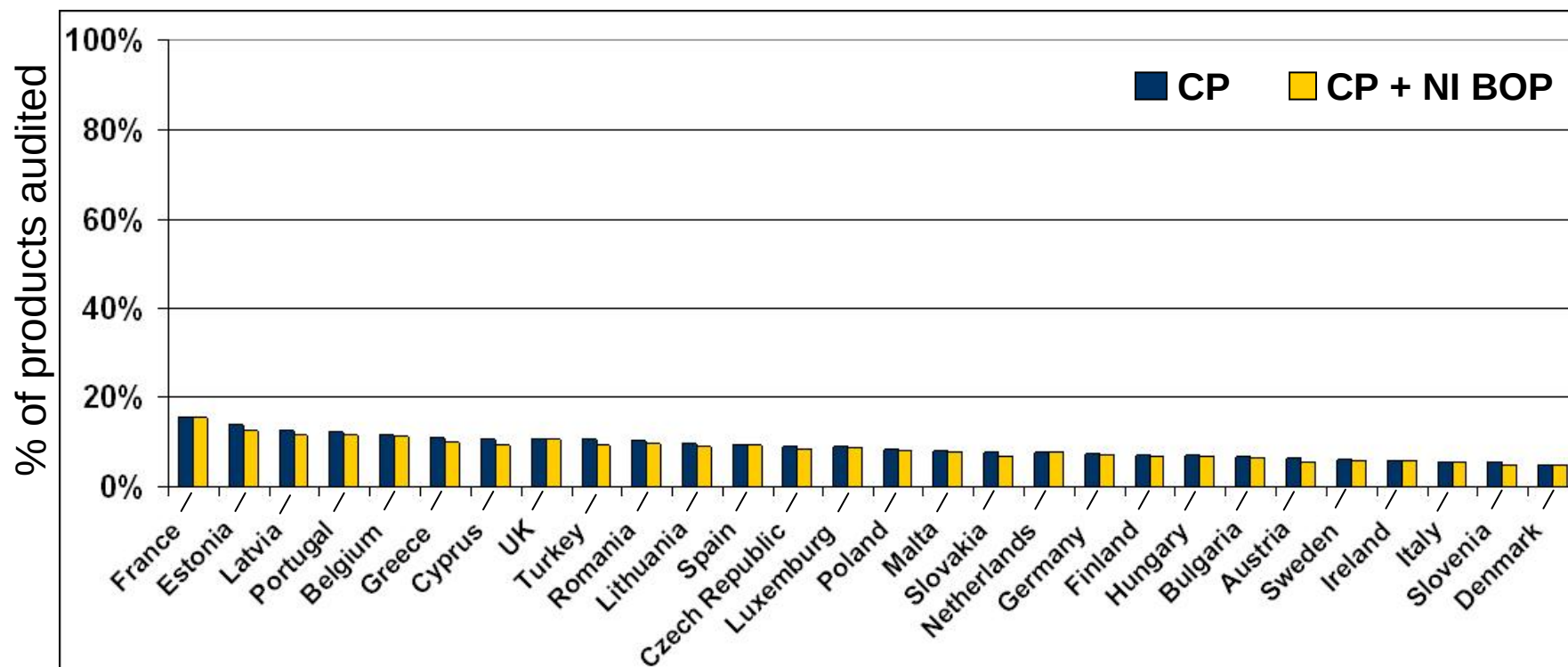


1% penetration of **BOP** health logos (range: 0-9%)

2 % penetration of **FOP** health logos (range: 0-12%)

Results – Products attractive to children

NI on products attractive to children, across 5 categories



- 5-16% of audited products were **products attractive to children (CP)**
- Practically all of them contained nutrition information (NI) of some kind

Conclusions

- **84** retail stores, more than **37,000** products
- Wide penetration of nutrition information in **5** product categories audited
 - On average **85%** (range **70-97%**)
 - Tabular/linear nutrition information most widespread, commonly found back-of-pack (average **84%**)
 - Nutrition claims and GDA most common front-of-pack information (up to **37%** and **63%**, respectively, by country)

Deriving a labelling typology

- To gain qualitative insight into:
 - how consumers categorise different forms of nutritional labels
 - an understanding of the conceptual systems consumers use to make sense of a range of nutritional label systems

This study utilised the *Multiple Sort Technique* (Rugg & McGeorge, 1997), using both 'free' and 'structured' sorting, on a range of nutritional labelling content elements presented on cards.

- The study was carried out in the UK, Poland, Turkey and France with 15 participants in each country, each of whom was regularly responsible for household food shopping.
- Total of 22 stimuli included: 5 health logos, 5 GDAs, 2 traffic lights, 2 hybrids, 5 nutrition claims and 3 nutrition tables

Example labels

1



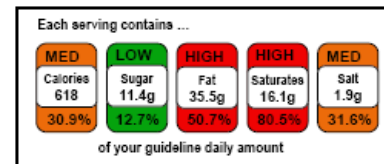
Explanation: Government system for identifying products that are healthiest within a product category

4



Explanation: Food retailer system for identifying how healthy products are within a product category by giving them one (Good), two (Better) or three stars (Best)

13



2



BRITISH HEART FOUNDATION

Explanation: Heart Foundation system for identifying products that are 'heart healthy' within a product category

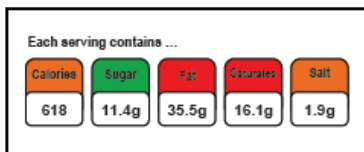
5



14



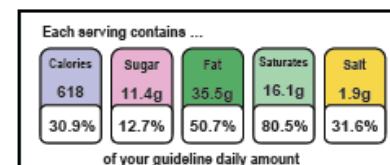
11



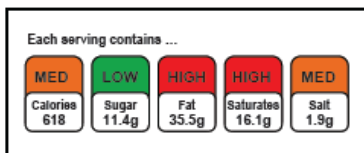
20

Nutrition information			
Typical values (per 100g)	Per 100g	Per pack	
Energy	618 kJ 146 kcal	2580 kJ 618 kcal	
Protein	4.8g	28.3g	
Carbohydrates (of which sugars)	12.8g 2.7g	84.1g 15.4g	
Fat (of which saturates)	35.5g 1.9g	220g 35.5g	
Fibre	2.8g	17.5g	
Salt (of which sodium)	0.5g 0.2g	3.1g 0.7g	

7



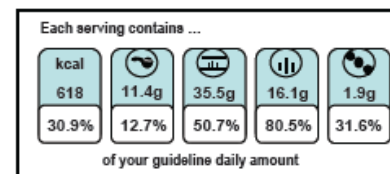
12



21

Nutrition information				Guideline daily amounts	
Typical values (per 100g)	Per 100g	Per pack	% based on GDA for women	Women	Men
Energy	618 kJ 146 kcal	2580 kJ 618 kcal	38.9%	2000 kcal	2500 kcal
Protein	4.8g	28.3g	48.1%	45g	55g
Carbohydrates (of which sugars)	12.8g 2.7g	84.1g 15.4g	23.9%	275g	300g
Fat (of which saturates)	35.5g 1.9g	220g 35.5g	68.9%	70g	90g
Fibre	2.8g	17.5g	56.4%	25g	30g
Salt (of which sodium)	0.5g 0.2g	3.1g 0.7g	33.3%	6g	8g

8



Deriving a labelling typology: Results

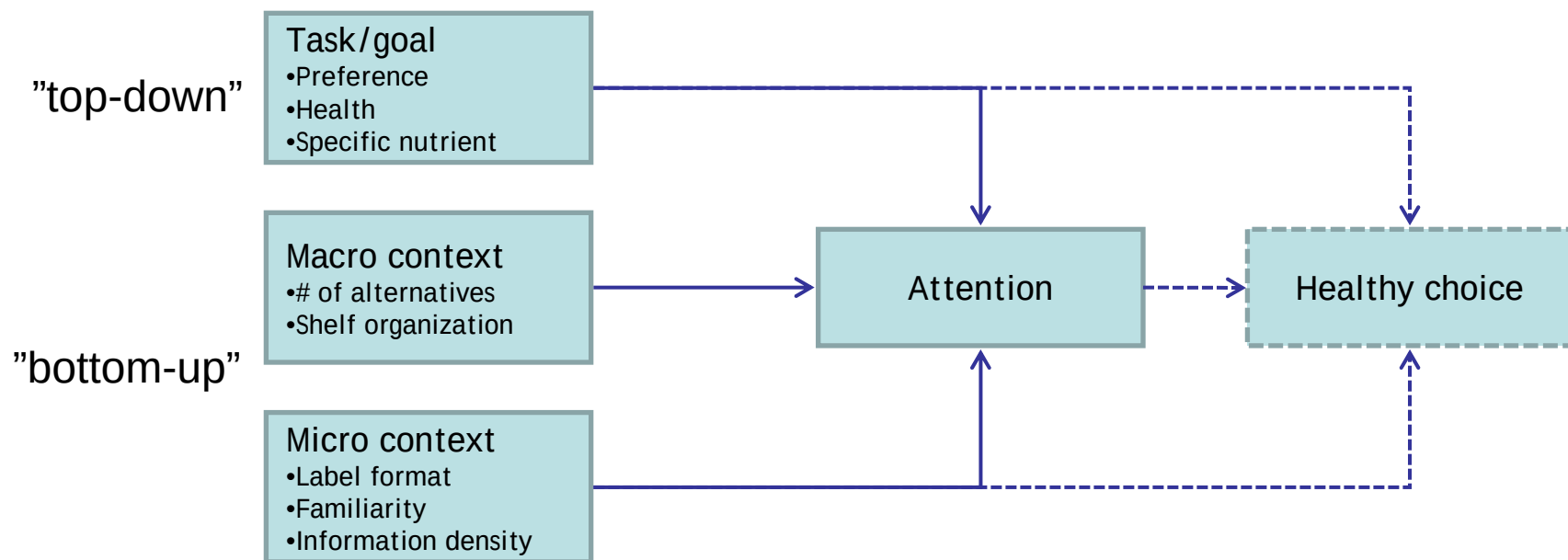
- The overall configuration of points within the Multiple Sort Analysis (MSA) appeared to be best explained by the constructs ‘levels of information’ and ‘healthfulness’
- Compact visual health logos displaying no detailed nutritional information tended to be clustered within a ‘healthy’ region.
- The ‘level of information’ included in the label also appeared to explain why particular labels were clustered together on the plots.
- As the degree of label ‘directiveness’ decreases the level of detailed information has to increase.

Deriving a labelling typology

- **Directive**
e.g. Simple and graduated Health logos
- **Semi-directive**
e.g. Traffic light labels, hybrid labels and nutrition tables overlaid with traffic lights
- **Non-directive**
e.g. % GDA systems and nutrition tables with and without % GDA information.

Attention and reading

- Identify and quantify key determinants of consumer attention to and reading of nutritional information on food labels in realistic situations



What determines attention to labels?

- Each respondent completed 2 visual search tasks:
 - logo detection (for present vs. absent logo on pack) and
 - logo detection and identification (for one vs. two logos).
- Factors common to both tasks that were systematically varied across trials:
 - Logo type - 3 levels - choices logo, monochrome GDAs or colour-coded (polychromatic) GDAs
 - Logo display size - 2 levels - presented at standard size or double size
 - Logo location on pack - 4 levels - top-left, top-right, down-left or down-right (but always appearing in an equal visual distance from the center of the computer screen);
 - Familiarity with logo location - 2 levels - current location is either same or different from the previous trial.
- Factors differed between the 2 visual search tasks:
 - Set size - 2 levels - logo is either present or absent (task 1) or there is one or two logos (task 2)
 - Familiarity with regards to set size - 2 levels - as the set size in current trial is either same or different from previous trial.



What determines attention to labels?

- Visual search paradigm was applied as an effective experimental tool to investigate what attracts consumer attention to labels.
- It was found that label characteristics (e.g., display size, position of the label on FOP, colour scheme); and familiarity with the type of the logo and the location it appears in are key determinants of attention to labels.
- The strong familiarity effect reported here could have a huge impact when applied to real in-store environments, printing nutrition logos on consistent location on the package will help the consumers find the label they are searching for, and thus reduce overall shopping time.

What determines attention to labels?



What determines consumer attention to nutrition labels?

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ABSTRACT

To identify the key determinants of consumer attention to nutrition labels, visual search tasks (present-absent; one – two targets) were used as an effective experimental tool. The main manipulation concerned: set size (number of labels on front of pack); label characteristics (display size, position of the label on front-of-pack, colour scheme); and familiarity with type of the label and its location on the front of pack. Attention capture was faster and more accurate when the label was present rather than absent, with doubled rather than standard display size, and with mono- rather than polychromatic colouring. These results confirm our hypotheses that display size, colour scheme, familiarity with the label and its location on the front of the pack are key determinants of consumer attention to labels. These findings are crucial to better understanding consumer attention to labels and thus the impact of nutrition information on healthy food choice.

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1. Introduction

Although a majority of consumers have a reasonable knowledge of nutrition and can use nutrition labels when prompted, only a minority seem to look at the nutrition labels when shopping (Black & Rayner, 1992; Grunert, 2008; Steenhuis, van Assema, Reubsaet, & Kok, 2004). It thus seems that (lack of) attention may be an important bottleneck in the context of nutrition information on the product packaging (Van Trijp, 2009). Therefore, it is important to know what attracts consumers' attention to nutrition labels, and whether these labels have any influence on consumer purchase decisions.

Current insight into consumers' attention to nutrition information is limited because attention is a poorly defined phenomenon and the actual attention process is difficult to be measured. Many of the existing consumer studies are based on using self-report measures or think-aloud protocols while shopping (Cowburn & Stockley, 2005; Higginson, Rayner, Draper, & Kirk, 2002; Kelly et al., 2009) which are likely to be poor and biased operationalisations of true attention processes. Also, conceptually, attention cannot be simply measured as a single "definite nervous path from stimulus to response" (Climcher & Rustichini, 2004; Shadlen, Britten, Newsome, & Movshon, 1996). This is because in the real in-store environment, the consumer is exposed to a great variety

of labels, products and brands, all competing for the consumer's attention. Thus, the key question becomes: what attracts consumer attention? And more specifically: what are the key determinants of consumer attention to nutrition labels?

To answer these questions, in the present study, we employ the visual search paradigm widely used in psychology and psychophysics (Bundesen, 1990; Duncan & Humphreys, 1989; Eriksen & Schultz, 1979; Estes & Taylor, 1964; Nessler, 1967; Sperling, Badinsky, Spivak, & Johnson, 1971; Treisman & Gelade, 1980). Visual search tasks, largely unexplored in the research on nutrition labels, constitute an effective research paradigm to explore and quantify the determinants of bottom-up attention to nutrition labels without such assessments being affected by higher order information processing. The underlying assumption is that the search task is easier (i.e. faster response and fewer mistakes) if the information stands out, having a higher salience than other information stimuli on the packaging.

In the following, we first present a theoretical background on attentional processes and then provide the motivation for choosing the visual search paradigm as an effective experimental tool to explore the relative importance of determinants of attention to nutrition labels.

2. Theoretical background on attention to labels

Defining attention is not an easy task and scientists have been struggling with it for many years (Broadbent, 1958; James,

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Qualitative Laddering

Specific objective

To investigate how health is articulated from signpost labels and the extent to which different labeling formats can encourage healthier choices.

Participants

N=60 in the UK, three groups of 20 participants

- Group 1: Parents of children (3-12yrs) aged between 25-55 yrs
- Group 2: 55+ yrs
- Group 3: Teenagers 14-17yrs (must buy some of their own food)

Qualitative Laddering - Procedure

- Laddering interviews, lasting approximately 1 hour.
- Each participant sees 8 cards. Each card displays a different labelling system across a range of 3 products within one of the two food categories included in the study (Category 1 = Biscuits, Category 2= Pizzas).
- The researcher then elicits the relevant attributes of the FOP formats participants rate as most and least useful and use these attributes to establish ladders to the higher level constructs that guide these preferences.
- These emerging constructs will then be subjected to hierarchical value mapping and qualitative analysis.

Qualitative Laddering – Stimuli

Labelling system	Level of Directiveness	Level of health communication
Grams	Non-directive	Nutrient level
GDA's		
Bar chart GDA's		
Traffic lights	Semi-directive	Nutrient level
Hybrid		
Logo	Directive	Product level
Graduated logo		
Numerical scoring system		

Qualitative Laddering – Systems Used

Each 200g portion (half of the pizza) contains

Calories	Sugar	Fat	Sat Fat	Salt
430	9.4g	8.8g	4.0g	2.0g

Each 200g portion (half of the pizza) contains

Calories	Sugar	Fat	Sat Fat	Salt
430	9.4g	8.8g	4.0g	2.0g
22%	10%	13%	20%	33%

of your guideline daily amount

Each 200g portion (half of the pizza) contains

Calories	LOW	MED	MED	MED
430	Sugar 9.4g	Fat 8.8g	Sat Fat 4.0g	Salt 2.0g



Each 200g portion (half of the pizza) contains

	LOW	MED	MED	MED
Calories	Sugar 9.4g	Fat 8.8g	Sat Fat 4.0g	Salt 2.0g
22%	10%	13%	20%	33%

of your guideline daily amount



Each 200g portion (1/2 pizza) contains

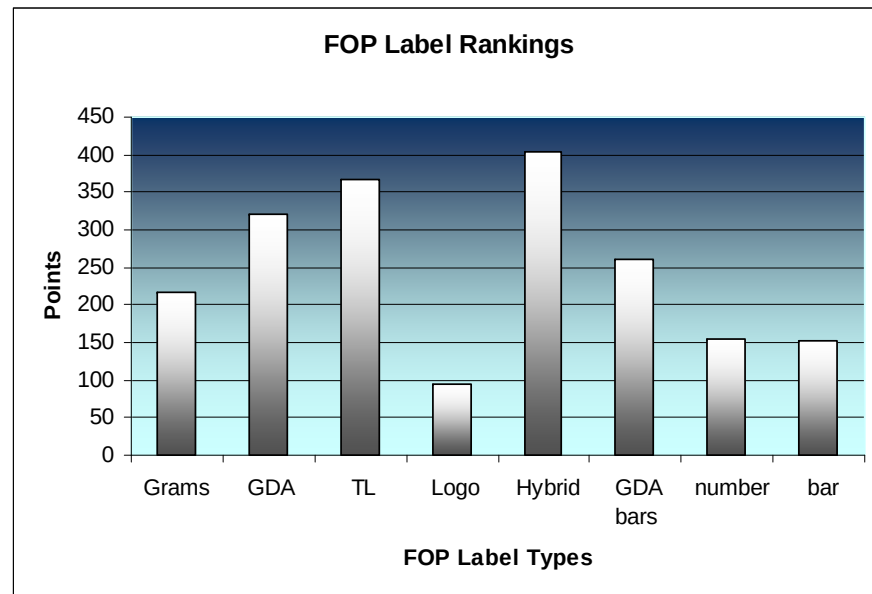
Calories	430	22%
Sugar	9.4g	10%
Fat	8.8g	13%
Sat Fat	4.0g	20%
Salt	2.0g	33%

of your guideline daily amount

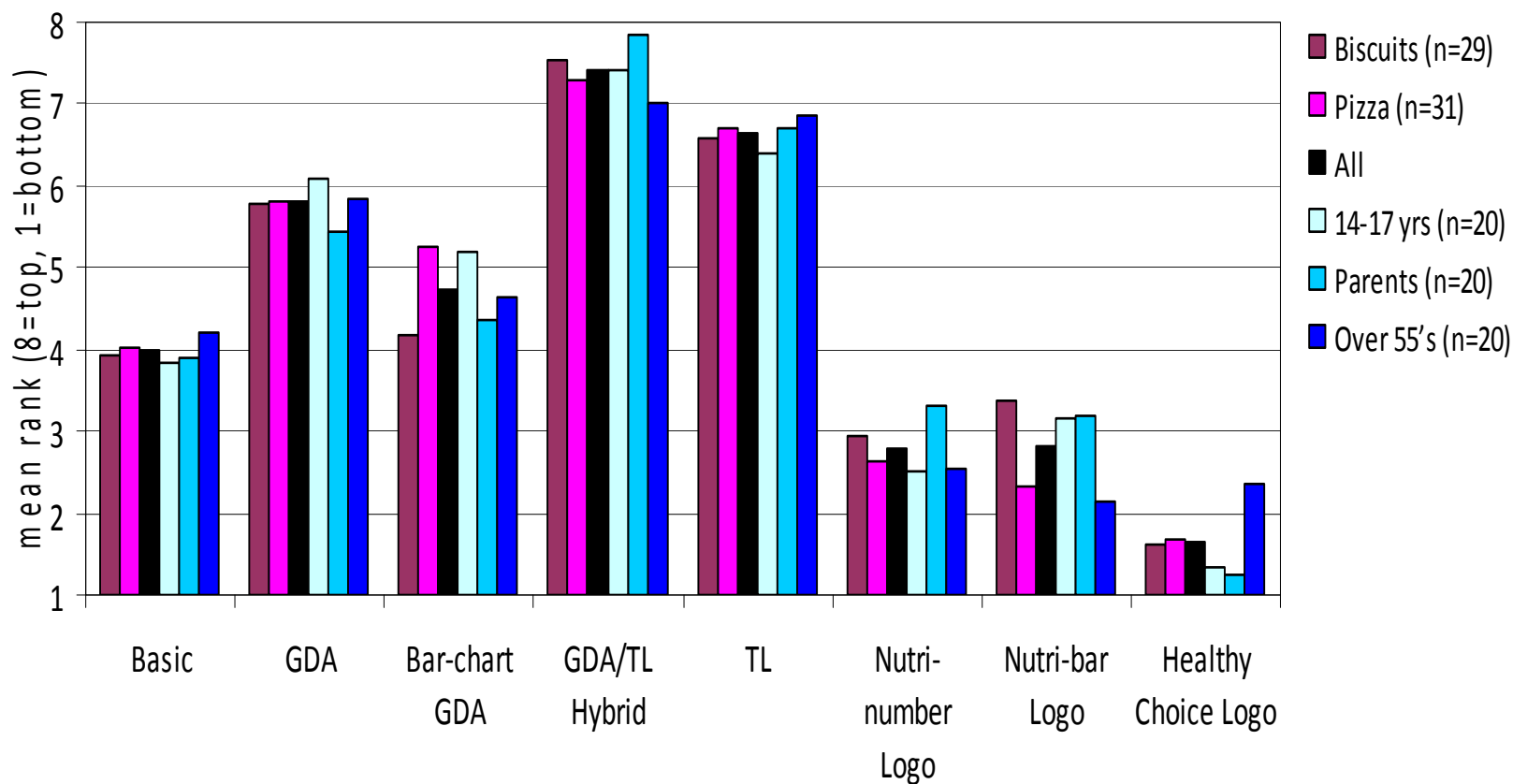
Healthy Choice	Unhealthy Choice

Qualitative Laddering – Initial Findings

- In the ranking task 82% of participants ranked the Hybrid label as either 1st or 2nd Choice and 84% ranked the Health Logo label as either last or second to last.
- Based on a simple points-based system (1st choice = 8 pts, 2nd choice = 7 pts etc) the 8 systems tested ranked as follows:



Qualitative Laddering – Initial Findings



Qualitative Laddering – Systems Used

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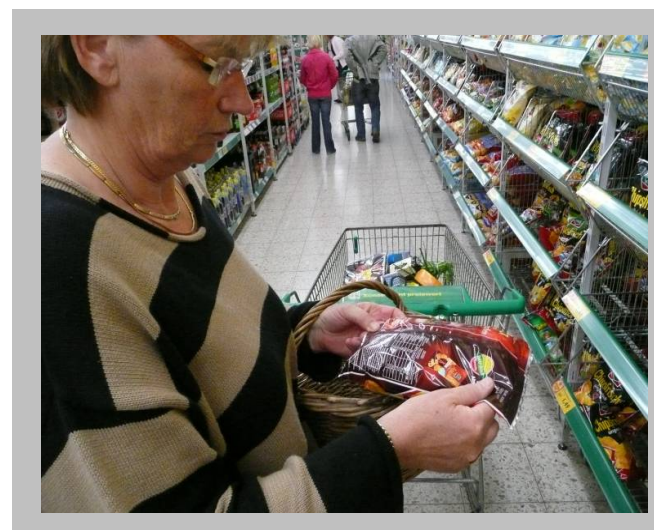
Calories	430	22%
Sugar	9.4g	10%
Fat	8.8g	13%
Sat Fat	4.0g	20%
Salt	2.0g	33%

of your guideline daily amount

Healthy Choice	Unhealthy Choice

Next steps

- Cross-national quantitative survey
 - Liking
 - Health inferences
- Experimental studies
 - Visual search tasks
 - Experimental decision outcome research
- Food sorting study
- In-store studies using observations, mobile eye tracking and electrodermal response
- Combining supermarket scanner data, product data and personal data





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Introducing FLABEL

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A⁺

A⁻

Welcome to the project website of FLABEL (Food Labelling to Advance Better Education for Life). Here you can find all relevant information and latest news from the EU-funded research consortium that is dedicated for 3 years (2008 – 2011) to establish the role of and identify what can be achieved when communicating nutrition information to consumers via food packaging labels.

[Click here to download the FLABEL project leaflet](#)

NEW - Status of the FLABEL project at mid-point

FLABEL reached its mid-point at the end of January 2010, and a status of the different work packages is available in the form of a summary report. To review the achievements so far, please [click here](#).

First FLABEL results now available

The first results from the FLABEL project are now available. Following 6 months of research, in 28 countries (27 EU Members States & Turkey), more than 37,000 products have been audited to determine the penetration of nutrition labelling in Europe today.