



Consumer study on the effects of the presence and location of the energy label in online shopping environments in Europe

Final report



Publication

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Executive summary

The EU energy label is an important tool to encourage consumers to purchase more efficient appliances. However, it is not clear *how* the label can best be displayed in online purchase settings to maximise attention to the label and promote its use in online decision-making. The aim of this study was to examine the influence of different positions of the energy label in web stores on consumers' online product choices. To this end, an **online experiment** was conducted in four countries: UK, Italy, Sweden and Poland. In the experiment, consumers could browse the pages of a (simulated) web store to look for a fridge-freezer. The simulated web store **closely mimicked a real web store**, while allowing for the **systematic variation of the position of the energy label** on the various web pages (main page, product pages, basket page). The study also investigated the influence of presenting energy labels on a price comparison website.

More specifically, the experiment tested:

- the influence of various positions of the energy label on the main page and on product pages;
- the influence of the presence (vs. absence) of the energy label on the basket page;
- the influence of the presence (vs. absence) of the energy label on a price comparison website

Key finding 1: Within the tested range of positions, consumers' product choices were unaffected by the exact position of the energy label on the main page and product pages

In the experiment, the position of the energy label was manipulated (i.e., systematically varied). On the **main page**, the nested energy label was shown either in direct proximity of or further away from the product price (**proximity manipulation**). When placed further away from the product price, the label was presented either on a white or grey background (**visibility manipulation**). Thus, on the main page, three different proximity/visibility variants were tested:

Label position on the main page	Example
1. High proximity to price, high visibility	HOBA Fridge-freezer RAS560H ******* (25) * Height: 185.5 cm * Colour: White * No Frost system * Fresh zone ** ** ** ** ** ** ** ** **
2. Low proximity to price, high visibility	## HOBA Fridge-freezer RASS60H ## ## ## ## ## ## ## ## ## ## ## ## ##



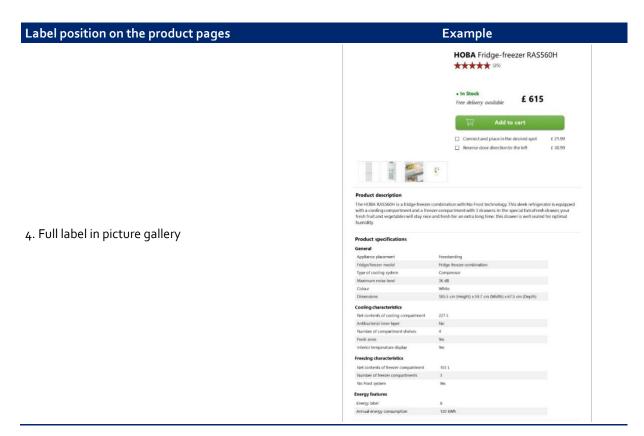


3. Low proximity to price, low visibility



To be able to assess the pure effects of these proximity and visibility manipulations, energy-related information on the individual product pages was kept constant – there, information about the energy class and annual energy consumption was provided **as part of the list of product features** (i.e., **no energy label** was displayed on the individual product pages).

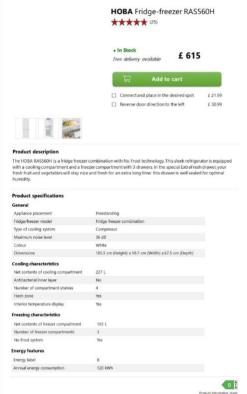
On the **product pages**, the energy labels was shown in one of three manners (or not at all): (1) a **full label** in the **picture gallery**, (2) an **energy arrow** near the product price (**high proximity** to price), or (3) an **energy arrow** below the product specifications at the bottom of the product page (**low proximity** to price).







6. Energy arrow – low proximity to price



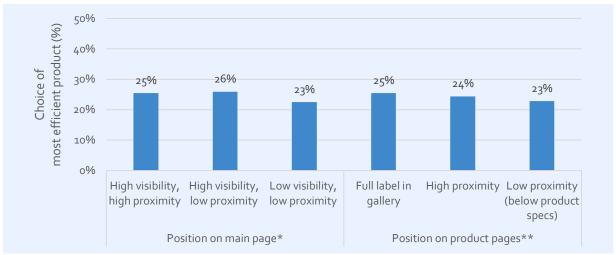
Again, to gain insight into the pure effect of these variations in the location of the energy label on the product pages, energy-related information on the main page was kept constant – there, the energy arrow was displayed at **low proximity to price and at low visibility** (i.e., on a darker background).





Respondents were randomly assigned to one of the six experimental conditions (i.e., label positions). The results did not reveal significant differences in the energy efficiency of consumers' choices between experimental conditions (i.e., label positions; see the figure below).





^{*} In these conditions, energy information was presented as part of the product specifications (i.e., no label) on the individual product pages. ** In these conditions, the energy label was shown at low price proximity and low visibility level on the main page.

Overall, **the exact position of the energy label** on the main page and product pages in the fictive web store **did not consistently impact consumer decision-making**: overall, respondents in all experimental conditions were equally likely to choose the most efficient product and to report having taken into account energy information in their choice. The generally very high familiarity with the energy label – 9 in 10 respondents recognized the label – might have played a role in the lack of differences between the conditions. Previous research suggests that consumers who are familiar with a label notice it more easily and actively seek it out.¹ This might have led to the majority of respondents noticing and using the energy label even when price proximity and visibility was lower in some conditions.

Key finding 2: Very few consumers clicked on an energy arrow or viewed a product information sheet

In the experiment, **only 1% of the respondents clicked on an energy arrow** to inspect the full label, and **only 3% viewed a product information sheet (PIS)**. This suggests that most consumers do not routinely assess this information. There could be various reasons for this, including a lack of interest in the information or not knowing that one can click on the energy arrow to view the full label (consumers may also not be aware of this when visiting a real web store).

¹ Thøgersen, J., Haugaard, P., & Olesen, A. (2010). Consumer responses to ecolabels. *European Journal of Marketing*, 44, 1787-1810; van Herpen, E., Seiss, E., & van Trijp, H. C. (2012). The role of familiarity in front-of-pack label evaluation and use: A comparison between the United Kingdom and The Netherlands. *Food Quality and Preference*, 26(1), 22-34.





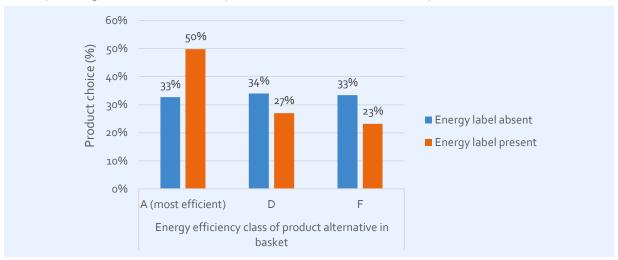
Key finding 3: The presence (vs. absence) of energy arrows next to products in the shopping basket promoted energy efficient product choices

About 7 in 10 respondents indicated to at least sometimes place multiple product alternatives in their shopping basket to directly compare them.

In a second task, we tested the effectiveness of **presenting the energy arrow next to products in the shopping basket** in promoting more efficient product choices. Here, half of the respondents (randomly decided) were exposed to a shopping basket with products (class A, D and F) that each carried an energy label. The other half saw the same basket, but without energy labels. Respondents could click on each product in the basket to inspect the individual product pages (with detailed information about the product, including its energy performance).

The results – summarised in the figure below – revealed that showing the energy arrow for each item in the shopping basket **considerably increased efficient choices**.





Key finding 4: The presence (vs. absence) of energy arrows next to products on a price comparison website promoted energy efficient product choices

Price comparison websites currently do not (clearly) present energy labels because this is not specified by the Internet labelling regulation. In a third task, we tested the influence of **presenting the energy arrow next to products on a price comparison website** on consumers' choices. Respondents were shown an image of a fictive price comparison website and were asked which of the fridge-freezers they would be interested in and would like to obtain more information about. For half of the respondents, the products carried an energy arrow, and for the other half of the respondents, the products did not carry an energy arrow (randomly decided).

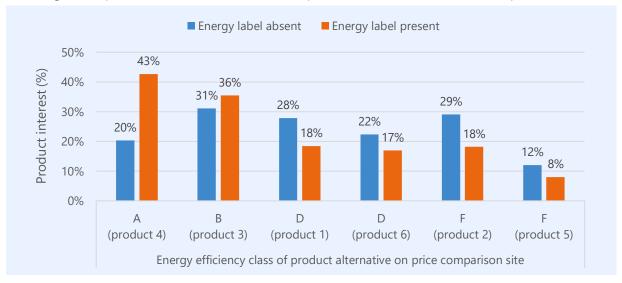
² In the figure, the three product alternatives are ordered from the most efficient (left) to the least efficient (right). In the actual task, the products were shown to respondents in random order.





The results, shown in the figure below, revealed that respondents were more interested in energy efficient products when energy labels were present (vs. absent). This suggests that providing energy labels on price comparison websites may effectively promote energy efficient consumer choices.





Key finding 5: The effects of the presence and position of the energy label on various web pages (main page, product pages, basket page, price comparison website) did not depend on the device type (desktop vs. mobile)

Half of the respondents completed the experiment on their computer or tablet and were exposed to a **wide-format version** of the web store, and half completed the experiment on their mobile phone and were exposed to a **long-format version** of the web store. The effects of the presence and position of the energy label on various web pages of a web store (main page, product pages, basket page) did not significantly depend on device type used to complete the experiment.

Overall conclusion

All in all, the present findings suggest that the provision (vs. not) of an energy label on different pages in a webstore can have marked effects on the energy efficiency of consumer choices, whereas the exact position of the (nested) energy label and the device type that is used have much more limited effects, if any.

³ In the figure, the six product alternatives are ordered from the most efficient (left) to the least efficient (right). In the actual task, the products were shown in mixed order.





1 Research background

The EU energy label is an important tool to encourage consumers to purchase more efficient appliances. The label informs consumers about the energy efficiency and energy consumption of various household products, such as washing machines, televisions, and refrigerators. It was originally designed for use in brick-and-mortar stores. To accommodate the rapid growth in online purchasing, online energy labelling requirements were introduced in 2014. Because there is limited screen space, online retailers may use a nested label display, where the full label is displayed after consumers click on or hover their mouse over a smaller label (a colored arrow with the energy class).

It is unclear, however, how the label can best be displayed online to ensure that it is being noticed by consumers and to increase the likelihood that the information is used in consumer decision-making. The EU online energy labelling regulation lays down requirements regarding the presentation of the energy label in a web store, such as that the energy label must be displayed in proximity to the price of the product. However, a recent compliance monitoring study by CLASP⁴ revealed that these legal requirements are not always clear to retailers. They identified several unclear or 'grey' areas in the online labelling requirements that require clarification, so retailers better understand their responsibilities. Moreover, it is not clear how the (different interpretations of the) requirements affect consumers' decision-making. If certain requirements indeed have a small impact on consumers' choices, this suggests that the regulation can be simplified, without compromising the label's effectiveness.

The objective of the proposed study is to provide insight into the influence of different manners of online presentation of the energy label on consumers' online decision-making. The results will provide input for the development of recommendations for the European Commission as well as guidance for retailers and market surveillance authorities to help increase the usefulness of online energy labelling for consumers, reduce the burden on online retailers and facilitate enforcement of the legal requirements.

1.1 Research questions

The current study seeks to answer a number of specific research questions relating to the manner of presentation of the EU energy label in web stores.

First, the EU online energy labelling regulation requires that the energy label is displayed in **proximity** to the product price. However, the regulation does not define a certain location or exact distance to the product price. The monitoring study conducted by CLASP also found that currently, (nested) energy labels are often not placed in direct proximity to (i.e., next to) the product price. It is unclear if and how this affects consumers' choices. In addition, in web stores, product prices are typically displayed on the **main page** (presenting an overview of the assortment) as well as on the **product pages** (presenting more detailed product information). The online labelling requirements imply that

⁴ CLASP (2021). Study to evaluate online energy labelling compliance in the EU.







the energy label is displayed on the main page, and it may additionally be displayed on the product page. Most web stores, however, only show the energy label on the main page, and not on the product pages (or other sub-pages where models and prices are presented). The current study therefore also examines *where* on the webpage (i.e., on an overview page listing different options or on the product pages) price-label proximity impacts consumers' decision making.

Research question 1: How does the proximity of the energy label to the price (low vs. high) on different pages in a web store influence consumers' decision-making?

Next to its proximity to price, the **visibility of the energy label** may also impact consumer choices. More specifically, the (nested) energy label is sometimes displayed on a (e.g., darker) background that could limit its conspicuousness, potentially reducing the likelihood that it is taken into account in purchase decisions.

Research question 2: How does the visibility of the energy label in a web store influence consumers' decision-making?

Online retailers also currently present the energy label at **different locations on the product pages**. For example, some only show the energy label class as part of the product specifications, others show the nested label in the product overview (e.g., next to the product's price), and yet others only show the full energy label in the picture gallery. The current study examines whether these different locations of the energy label on the product pages affect consumers' choices.

Research question 3: How does the presence and location of the energy label on the product pages in a web store (e.g., a full label in the picture gallery or a nested display in the product overview) influence consumers' decision-making?

The energy label may not only impact consumer choices when presented on main pages and product pages, however. It might be that some consumers place multiple products in the shopping basket they *consider* purchasing to be able to more easily compare them. For this group, additionally presenting the energy label for products in the shopping basket may steer towards more energy efficient choices.

Research question 4: Do consumer use the online shopping basket for directly comparing multiple product alternatives? Does the presentation of the energy label in the online shopping basket influence consumers' decision-making?

Price comparison sites do currently not (clearly) present energy labels because this is not specified by the Internet labelling regulation.⁵ The current study tests whether presentation of the energy label for products listed in product overviews of price comparison website impacts consumer choices, and whether consumers would actively select products based on energy efficiency.

⁵ CLASP (2021). Study to evaluate online energy labelling compliance in the EU.







Research question 5: Does the energy label impact consumer decisions on price comparison websites? Do consumers actively select products on energy efficiency?

Finally, consumers may search for and purchase a product on their desktop computer (or laptop or tablet) or their mobile phone. This can have an impact on the manner in which energy labeling information is viewed: in a mobile (vs. desktop) setting, consumers are more likely to have to scroll down further in order to see the energy label (such as when a nested arrow is provided at the bottom of the product page). This could impact the effectiveness of the energy label on product choices, perhaps especially so when the energy label is not presented in direct proximity to the product price.

Research question 6: Does a desktop vs. mobile presentation of the web store influence (the effects of different positions of the energy label on) consumer decisions?

To answer the research questions, an **online experiment** was conducted in four countries (UK, Italy, Sweden and Poland). In the experiment, consumers could browse the pages of a (simulated) web store to look for a fridge-freezer. The simulated web store closely mimicked a real web store, while allowing for the systematic variation of the position of the energy label on the various web pages. The experiment was complemented with a **consumer survey**. The research methodology is described in more detail in Chapter 2.





2 Research methodology

2.1 Sample characteristics

An online experiment was carried out in four countries (UK, Italy, Sweden, and Poland). The sample (total N = 4,897) is representative of the general (18-65) population of each country on age, gender, and geographical region. In Table 2.1, characteristics of the sample (weighted) are provided for each device type used for completing the experiment and country. In Appendix A, unweighted sample characteristics are provided.

Table 2.1. Sample characteristics by device type and country (weighted)

	Total	Device	used		Cou	untry		
	Total sample	Desktop	Mobile phone	United Kingdom	Italy	Sweden	Poland	
Sample size	4,897	2.459	2.438	1.225	1.220	1.222	1.230	
<u>Gender</u>								
Male	50,2%	55,0%	45,3%	49,8%	49,9%	51,1%	50,0%	
Female	49,8%	45,0%	54,7%	50,2%	50,1%	48,9%	50,0%	
<u>Age</u>								
18-24	12,3%	8,5%	16,3%	14,2%	11,2%	13,0%	11,0%	
25-34	21,0%	18,2%	23,8%	22,0%	17,1%	23,5%	21,3%	
35-44	21,7%	22,5%	21,0%	20,5%	20,4%	20,8%	25,2%	
45-54	22,6%	23,1%	22,0%	22,7%	25,9%	21,5%	20,1%	
55-65	22,4%	27,7%	17,0%	20,6%	25,4%	21,3%	22,5%	
Education level								
Low/middle	46,0%	49 , 6%	58,4%	38,6%	59,9%	60,8%	56,6%	
High	54,0%	50,4%	41,6%	61,5%	40,1%	39,2%	43,4%	
Financial situation ⁶	3,2	3,2	3,2	3,3	3,1	3,1	3,2	

2.2 Study design

The online study consisted of four parts. The full survey is provided in Appendix B.

Below, each part is explained in more detail, including the specific experimental conditions that were tested. Respondents completed all parts either in a **desktop or mobile version**. Respondents who viewed the desktop version completed the survey on a desktop computer, laptop or tablet, and respondents who viewed the mobile version completed the survey on a mobile phone. In this section, example images of the desktop version are provided. Appendix C presents example images of the mobile version.

All information was provided in the respondents' language.

⁶ This was assessed with the question: *Thinking about your household's financial situation, how easy or difficult is it to make ends meet?*, with answer options ranging from 1 (*very difficult*) to 5 (*very easy*).





2.2.1 Online shopping task

In the **first part**, respondents completed a fictive **online shopping task**. They were asked to imagine that they planned to buy a new fridge-freezer online and were about to visit the online shop of a well-known white goods retailer to search for fridge-freezers. Respondents were asked to browse the pages of the web store as they would do in reality. They were informed that they could click on each product for more detailed information and that they could browse as long as they wanted until they had decided on the fridge-freezer of their choice (which they could select by clicking on the "Add to cart" button, as in reality). Respondents were *not* informed that they could click on energy arrows or links to the product information sheet (PIS), to avoid that this information itself would increase attention to energy-related information (a priming effect).

The simulated web store

After the instruction, respondents landed on the **main page** of the simulated web store, which offered six product alternatives (see Figure 2.1, left part). Here, respondents could click each product to view the more detailed **product pages** (see Figure 2.1, right part for one example). When clicking on the nested energy label (on the main or product pages), the full energy label opened in a pop-up window. Respondents were able to open and inspect each product's product information sheet. Respondents could select a product by clicking on "Add to cart", after which they were asked to confirm their choice ("Are you sure you want to choose this fridge-freezer?").

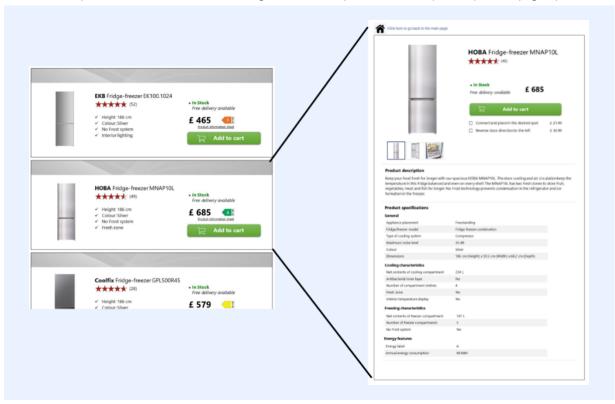
The information on the main page and individual product pages closely resembled the information content and format of real web stores selling white goods. On the main page, the six product alternatives were presented (product images), with a description of several key attributes (e.g., product image, brand and model name, price, height, colour, etc.). The individual product pages contained more detailed information about the product. These pages included a picture gallery with several product pictures, a short text describing the product's key features, and a detailed list of product specifications (16 attributes).

The six product alternatives varied in energy performance as well as in other aspects. Appendix D provides an overview of the product features.





Figure 2.1. Visual overview of the choice task (example). On the left side of the picture the main page is shown, which lists six product alternatives. When clicking on one of the products, the respective product page opens.



To investigate the effects of different placements of the EU energy label on the main and product pages, an **experimental approach** was used in which respondents were **randomly assigned** to one of six experimental conditions. Table 2.2 presents a descriptive overview of the label position variants on the main page and product pages.

On the **main page**, the nested energy label was shown either in direct proximity of or further away from the product price (**proximity manipulation**). When placed further away from the product price, the label was presented either on a white or grey background (**visibility manipulation**). Thus, on the main page, three different proximity/visibility variants were tested. Table 2.3 provides a visual overview of these manipulations (for one product).

On the **product pages**, the energy label was either not shown, presented as a **full label in the picture gallery**, presented in **nested form in proximity to the product price**, or presented **in nested form at the bottom of the product page**, below the product specifications (i.e., four variants). Table 2.4 provides a visual overview of these manipulations.

In the experiment, all respondents were exposed to the **exact same products with the exact same features**. The only aspect that differed across experimental groups was the position of the energy label (six conditions, see Table 2.2). To ensure that the experimental groups were equivalent, respondents were **randomly** assigned to one of the six groups. In this way, differences in choice behaviour (if any) between the groups **could only be explained by our manipulation**, i.e., by differences in the position of the energy label.





Table 2.2 Descriptive overview of the experimental conditions (main page)

Condition	Energy label position: main page	Energy label/class position: product page
1	High visibility/high proximity to price	Energy class in product specifications only
2	High visibility/low proximity to price	Energy class in product specifications only
3	Low visibility/low proximity to price	Energy class in product specifications only
4	Low visibility/low proximity to price	Full label in picture gallery
5	Low visibility/low proximity to price	Energy class in nested label (link to full label) – high proximity to price
6	Low visibility/low proximity to price	Energy class in nested label (link to full label) – low proximity to price

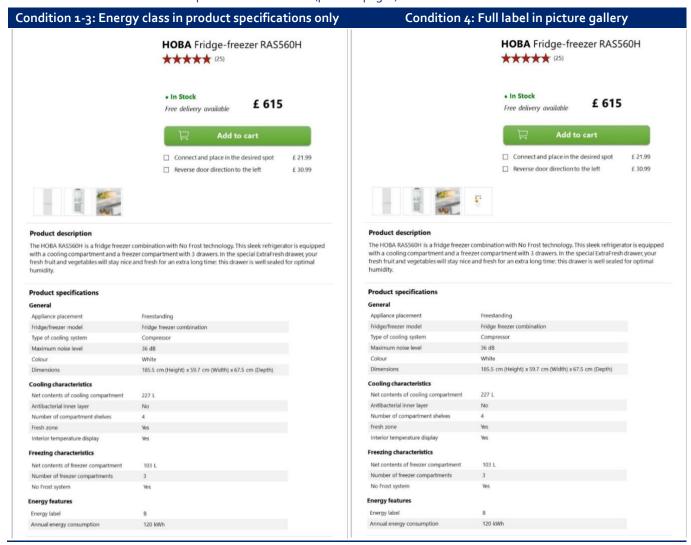
Table 2.3 Visual overview of the experimental conditions (main page)

Condition	Main page	Example product on main page
1	High visibility/high proximity to price	
		HOBA Fridge-freezer RAS560H ★★★★ (25) In Stock Free delivery available Free delivery available £ 615 Product information sheet Fresh zone Add to cart
2	High visibility/low proximity to price	HOBA Fridge-freezer RASS60H HOBA Fridge-freezer RASS60H History Height: 185.5 cm Colour: White No Frost system Fresh zone Add to cart
3-6	Low visibility/low proximity to price	HOBA Fridge-freezer RASS60H HOBA Fridge-freezer RASS60H HIN Stock Free delivery available Colour: White No Frost system Fresh zone Add to cart



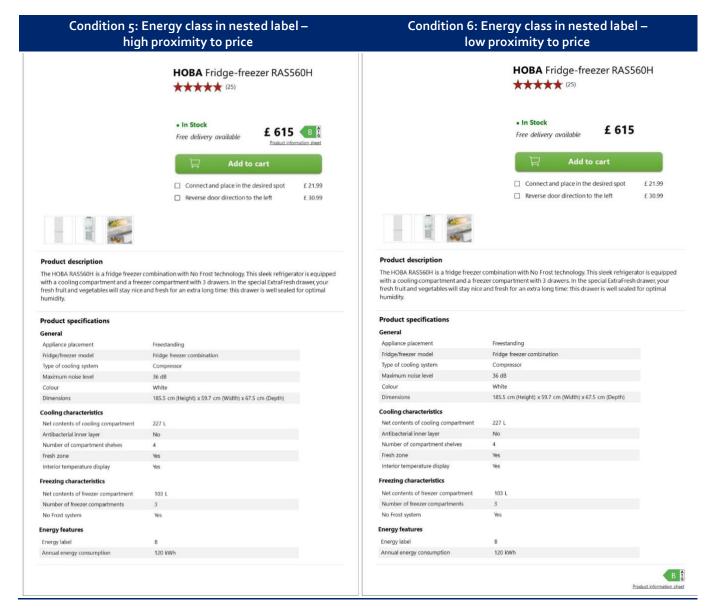


Table 2.4. Overview of the experimental conditions (product pages)









2.2.2 Online shopping basket

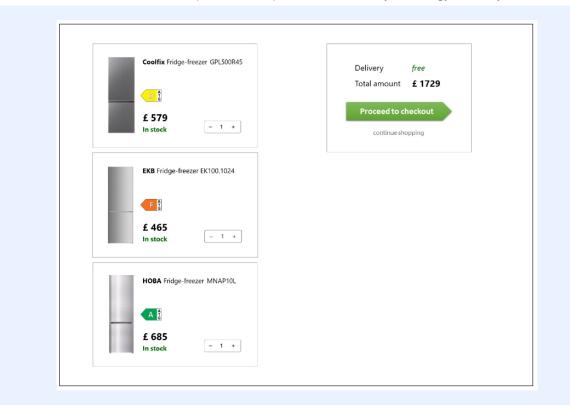
In the **second part**, respondents imagined that out of the six fridge-freezers, they had selected three that they seriously consider. They imagined adding these options to their **online shopping basket** to be able to better compare them (see Figure 2.2). Respondents were asked to indicate which of the products in the basket they would choose. Respondents could click on each of the products to open the respective product page that was also accessible during the previous shopping task.

To test whether the presence of the energy efficiency arrow would lead to a more energy efficient choice, the products in the shopping basket were shown either **with or without the energy arrow** (randomly decided).





Figure 2.2. The online shopping basket. For half of the respondents, the products carried an energy efficiency arrow, and for the other half of the respondents, the products did not carry the energy efficiency arrow.



2.2.3 Price comparison website

In the **third part**, respondents imagined visiting a **price comparison website** and searching for fridge-freezers there (see Figure 2.3). They were shown an image of a fictive price comparison website and were asked which of the fridge-freezers they would be interested in and would like to obtain more information about. Respondents also indicated which characteristics (from a drop-down list) they would like to filter their results on on a price comparison website. As for the shopping basket task, for half of the respondents, the products carried an energy arrow and for the other half of the respondents the products did not carry an energy arrow (randomly decided).





Figure 2.3. The price comparison website. For half of the respondents, the products carried the energy efficiency arrow, and for the other half of the respondents, the products did not carry the energy efficiency arrow.



Prices of fridge-freezers in all respondent tasks were converted into the currencies of the selected countries and adjusted using country-specific price indices to reflect differences in prices of household appliances across countries.⁷

2.2.4 Post-experiment survey

In the **last part**, respondents answered several more general questions inquiring, for example, about their familiarity with the energy label, whether they find energy consumption important when buying a refrigerator or freezer, and whether they would search and buy a refrigerator or freezer online.

2.3 Statistical analysis

Responses to the experimental conditions were recoded into binary data (choosing the most efficient product, indicating that energy performance was important in one's choice, and having clicked on at least one label/product information sheet) and logit analyses were performed for these outcomes. The models estimate the effects of the positions/presence of the energy label(s) and device types, while controlling for differences across countries. The consistency of the findings across countries is investigated by examining whether the effects of label position/presence differ across countries.

The robustness of the results was also examined. For the online shopping and shopping basket tasks, the choice analyses were repeated with the energy consumption of the selected product (in

⁷ More specifically, prices were multiplied by factor 1,19 for Sweden and by factor 0,87 for Poland.







kWh/annum) as (continuous) outcome variable.⁸ For the price comparison task, the choice analyses were repeated with the average efficiency of the selected products (the so-called "consideration set") as (continuous) outcome variable.⁹ For the self-reported importance of energy performance, robustness was checked by repeating the analyses with a binary variable indicating whether or not the respondent indicated that the efficiency class was important for one's choice (yes/no) as outcome, and for the clicking data, this was done by repeating the analyses using the total number of clicks as outcome. Only results that were robust across both types of analyses (i.e., p < 0.05) are discussed in Chapter 3, with p-values in the footnotes reflecting findings of the primary analyses (described in the paragraph above) unless otherwise indicated.

_..

⁸ Product 1 (A): 98 kWh/annum, product 2 (B): 120 kWh/annum, product 3 (D): 168 kWh/annum, product 4 (D): 204 kWh/annum, product 5 (F): 304 kWh/annum, product 6 (F): 263 kWh/annum. In the analysis, we compared the average energy consumption of the chosen products across experimental conditions (i.e., across different locations of the energy label).

⁹ Energy efficiency scores: A = 7, B = 6, C = 5, D = 4, E = 3, F = 2, G = 1. The average energy efficiency level of the consideration set is equal to the sum of the considered products' energy efficiency scores divided by the number of products in the consideration set.





Results

This chapter describes the results of the study.

3.1 Online shopping task

In the online shopping task, energy-related information was always present, but the position of the energy label varied (six conditions, see Table 3.1). In this section, we examine the influence of the position of the energy label on the main page and individual product pages of a web store on the energy efficiency of consumers' choices. It is important to note that the results do not provide insight into the effectiveness of the energy label per se (which would require a test condition in which label information is absent): we study the influence of the **position** of the online energy label.

3.1.1 Choice behaviour

It was examined whether the different energy label positions on the main and product pages (e.g., low or high price-label proximity, presence of the energy label in the picture gallery, etc.) affect the likelihood that respondents would choose the most energy efficient product in a hypothetical online shopping task (i.e., the product with energy efficiency class "A"). The results are summarised in Table 3.1 and Figure 3.1.

On the main page, the (nested) energy label was shown in one of three locations (see Table 2.3 for examples): next to the product price (high proximity), further away from the product price (low proximity), and further away from the product price on a darker background (low proximity and visibility). In these three conditions – where energy label locations on the main page were varied – energy-related information on the product pages (i.e., information about the energy class and annual energy consumption) was provided as part of the product specifications (i.e., no energy label was displayed on the product pages).

On the **product pages**, the (nested or full) energy label was shown in one of three locations (or not at all; see Table 2.4 for examples): in the picture gallery (full label), or as nested label either near the product price (high proximity to price) or below the product specifications (low proximity to price). In these conditions – where energy label locations on the individual product pages were varied – the energy arrow was displayed at low proximity to price and at low visibility (i.e., on a darker background) on the main page.

It was found that overall (i.e., across all countries and device types), the position of the energy label on the main page and product pages did not influence the energy efficiency of the chosen fridgefreezer¹⁰: across all conditions, about one in four respondents (24%) chose the most efficient fridgefreezer. Depending on the location of the energy label, the percentage of respondents who chose the

¹⁰ Effect of label position (six conditions): p = 0.45.



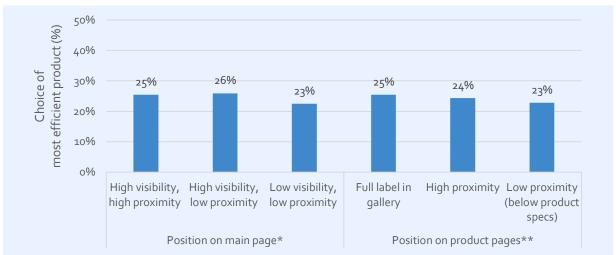
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most efficient fridge-freezer ranged between 23% and 26% (see Figure 3.1). None of the differences are statistically significant (i.e., they may be due to chance). 11

Figure 3.1. Percentage of respondents choosing the most efficient fridge-freezer, depending on the position of the energy label



^{*} In these conditions, energy information was presented as part of the product specifications (i.e., no label) on the individual product pages. ** In these conditions, the energy label was shown at low price proximity and low visibility level on the main page.

Figure 3.2. Average energy consumption (in kWh/annum) of the selected products, depending on the position of the energy label



^{*} In these conditions, energy information was presented as part of the product specifications (i.e., no label) on the individual product pages. ** In these conditions, the energy label was shown at low price proximity and low visibility level on the main page.

To check the robustness of these findings, we also looked at the **average energy consumption (in kWh/annum) of the products that respondents chose**, and whether this differed depending on the position of the energy label (six conditions). Table 3.2 and Figure 3.2 show the results. This analysis also revealed no significant effect of the energy label position on the energy performance of the chosen products.¹² Respondents selected fridge-freezers with an average energy consumption between 186

¹² Effect of label position (six conditions): p = 0.46.



¹¹ All *p*-values > 0,05.





and 182 kWh/annum depending on the position of the energy label. Again, none of the differences are statistically significant. Thus, consumers' product choices appear **unaffected** by the exact location of the energy label.

Table 3.1. Percentage of respondents choosing the most efficient fridge-freezer, across energy label positions, device types, and countries.

	Total	Device used		Country			
	sample	Desktop	Mobile phone	UK	IT	SE	PL
Main page: high visibility, high proximity Product page: energy information in products specs	25,5%	25,7%	25,3%	28,4%	34,5%	23,0%	16,1%
Main page: high visibility, low proximity Product page: energy information in products specs	25,9%	27,3%	24,4%	22,0%	36,5%	27,7%	17,6%
Main page: low visibility, low proximity Product page: energy information in products specs	22,5%	21,7%	23,3%	23,9%	23,9%	23,6%	19,5%
Main page: low visibility, low proximity Product page: full label in gallery	25,5%	27,1%	23,8%	18,4%	35,3%	29,9%	18,4%
Main page: low visibility, low proximity Product page: high proximity	24,4%	26,4%	22,3%	27,8%	31,5%	18,3%	19,8%
Main page: low visibility, low proximity Product page: low proximity (below specs)	22,8%	21,1%	24,6%	21,0%	27,7%	19,2%	23,3%

Table 3.2. Average energy consumption (in kWh/annum) of the selected fridge-freezers, across energy label positions, device types, and countries.

	Total	Device	used		Cou	ntry	
	sample	Desktop	Mobile phone	UK	IT	SE	PL
Main page: high visibility, high proximity Product page: energy information in products specs	186	189	183	186	171	190	195
Main page: high visibility, low proximity Product page: energy information in products specs	187	184	190	193	163	195	196
Main page: low visibility, low proximity Product page: energy information in products specs	192	190	195	191	182	200	196
Main page: low visibility, low proximity Product page: full label in gallery	188	186	189	199	177	183	193
Main page: low visibility, low proximity Product page: high proximity	191	186	196	187	180	202	194
Main page: low visibility, low proximity Product page: low proximity (below specs)	189	187	187	196	175	196	187

The **device on which the experiment was completed** (computer or mobile) also did not have an impact on choices, nor influence the impact of the energy label positions on choices. ¹³ More specifically, there are no differences in the energy efficiency of respondents' choices across the positions of the energy label (the six variations), neither among respondents who completed the task on their computer or tablet (who were exposed to the wide-format, desktop version of the web store), nor among respondents who completed the task on their mobile phone (who were exposed to the long-format, mobile version of the web store).

¹³ Effect of device type with most efficient product (selected/not selected) as outcome: p = 0.45; with energy consumption of the selected product (in kWh/annum) as outcome: p = 0.10.





Overall, not taking into account the experimental conditions, respondents in Italy chose the most efficient product most frequently (32% on average).¹⁴ The effects of label position did not consistently vary across countries.¹⁵

In sum, the results suggest that, if energy label information is present, the exact position of the energy label on the main page and product pages does not affect consumers' choices.

3.1.2 Self-rated importance of energy performance in choice

After making their choice, respondents were additionally asked what factors they took into account when making their choice, from a list of product characteristics. It was examined if the position of the energy label influenced whether or not respondents took into account energy performance (energy consumption per year and/or energy label efficiency class) in their decision.

Respondents who indicated that they took the energy performance (i.e., efficiency class and/or energy consumption) of products into account in their decision were much more likely to choose the most efficient appliance (39%) than respondents who indicated that they did not take this into account (10%).¹⁶

In line with the findings on choice behaviour, the **position of the energy label did not influence whether or not respondents took into account energy performance in their decision**, and this was the case for both device types.¹⁷ However, respondents who completed the desktop version of the survey indicated more often (52%) that they took into account energy performance than respondents who completed the mobile version (47%),¹⁸ which could suggest that more attention was paid to the energy label in the desktop version when making choices. Countries did not differ in the effects of label positions on the extent to which respondents self-reported to have taken into account energy performance in their decision. Overall, Swedish (39%) respondents were least likely to indicate they had taken into account energy performance, compared with Polish (58%), Italian (54%) and British (47%) respondents.¹⁹

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¹⁴ Effect of country with most efficient product (selected/not selected) as outcome: p < 0.001 (IT vs. other countries: p < 0.05); with energy consumption of the selected product (in kWh/annum) as outcome: p < 0.001 (IT vs. other countries: p < 0.05).

¹⁵ Condition x country interaction with most efficient product (selected/not selected) as outcome: p = 0.01; with energy consumption of the selected product (in kWh/annum) as outcome: p = 0.20.

¹⁶ Similarly, respondents who indicated that they took energy performance into account selected products with a lower energy consumption, on average (159 kWh/annum), compared to respondents who indicated that they did not take this into account (218 kWh/annum).

¹⁷ Effect of position: p = 0, 63; position x device type interaction: p = 0.46.

¹⁸ Effect of device type: p < 0.001.

¹⁹ Effect of country: p < 0,001 (SE vs. other countries: all p-values < 0,05; UK vs. other countries: all p-values < 0,05).





Figure 3.3. What factors did you take into account when making your choice? *Multiple answers possible*. (online shopping task)

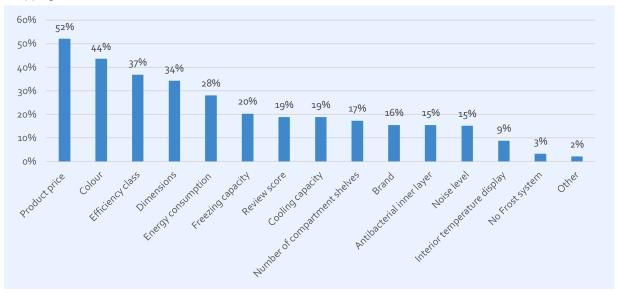


Figure 3.3 provides an overview of the percentage of respondents who indicated to have taken into account a certain factor in their choice. Table 3.3 shows the percentage of respondents who indicated to have taken into account energy performance in their choice, overall and broken down by experimental condition, device type and country.

Table 3.3. Percentage of respondents indicating to have taken into account either energy consumption or efficiency in their choice, across energy label positions, device types, and countries.

	Total	Device us Total			Cou	Country	
	sample	Desktop	Mobile phone	UK	IT	SE	PL
Main page: high visibility, high proximity Product page: energy information in products specs	49,7%	50,4%	49,2%	51,0%	55,2%	38,2%	54,6%
Main page: high visibility, low proximity Product page: energy information in products specs	48,6%	52,7%	44,6%	45,4%	53,7%	38,8%	56,6%
Main page: low visibility, low proximity Product page: energy information in products specs	48,6%	50,6%	46,5%	49,0%	49,8%	35,5%	60,0%
Main page: low visibility, low proximity Product page: full label in gallery	52,2%	53,3%	51,1%	46,5%	57,8%	45,6%	58,9%
Main page: low visibility, low proximity Product page: high proximity	48,4%	51,8%	45,0%	44,4%	52,7%	38,6%	57,9%
Main page: low visibility, low proximity Product page: low proximity (below specs)	49,6%	54,3%	44,8%	45,4%	54,0%	39,4%	59,7%

3.1.3 Clicking behaviour

A very small percentage of respondents viewed the **full energy label** (either by clicking on the nested label or by viewing it in the picture gallery): on average, only 2% did this at least once. Table 3.4 (left part) shows the results. In the conditions where respondents always had to **click on an energy arrow to see the full label** (i.e., all conditions, except when the full label was presented in the picture gallery), **only 1% of the respondents did this at least once**, on average. When the full energy label was





presented in the **picture gallery, more respondents viewed the full label**: in that case, 7% did this at least once.

The **product information sheets (PISs)** were also **viewed only by a small minority of respondents: 3%, on average**. Table 3.4 (right part) shows the results per energy label position condition, overall and per device type. The position of the energy label (and hence, the PIS that accompanies it) did not influence whether or not the PIS was viewed. ²⁰ In other words, there are no significant differences between the experimental groups (label positions) in the percentage of respondents who viewed at least one PIS (i.e., the differences may be due to chance). The full energy labels and PISs were viewed slightly more often in the desktop (3% for energy label and 5% for PIS) vs. mobile (2% and 1%, respectively) version.²¹ Country of the respondent had no effect on clicking behaviour.²²

Table 3.4. Percentage of respondents who viewed at least one full label and/or product information sheet (PIS), across energy label positions and device types.

	% of respondents who viewed at least one full label			view	respondents who wed at least one t information sheet (PIS)	
	Total	Device	used	Total	Device	used
	sample	Desktop	Mobile phone	sample	Desktop	Mobile phone
Main page: high visibility, high proximity Product page: energy information in products specs	1,3%	1,2%	1,5%	2,8%	4,6%	1,0%
Main page: high visibility, low proximity Product page: energy information in products specs	1,5%	2,2%	0,7%	2,6%	4,1%	1,0%
Main page: low visibility, low proximity Product page: energy information in products specs	1,0%	1,2%	0,7%	3,4%	5,9%	1,0%
Main page: low visibility, low proximity Product page: full label in gallery	7,3%	8,3%	6,4%	3,2%	6,1%	0,2%
Main page: low visibility, low proximity Product page: high proximity	1,5%	1,7%	1,2%	3,4%	4,9%	2,0%
Main page: low visibility, low proximity Product page: low proximity (below specs)	1,7%	2,7%	0,7%	3,1%	5,3%	0,7%

Thus, the **full energy labels and product information sheets were viewed only by a small percentage of respondents**. This suggests that most consumers do not routinely assess this information. There could be various reasons for this, including a lack of interest in the information or not knowing that one can click on the energy arrow to view the full label (consumers may also not be aware of this when visiting a real web store). Further, depiction of the full label in the **picture gallery** and viewing the products on a larger screen (in **desktop mode**) appears to slightly increase the likelihood of viewing the full energy label and product information sheet.

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²⁰ Effect of energy label position on whether or not the full label was viewed: p < 0.001; depiction in picture gallery vs. as nested label on product pages: all p-values < 0.001. Effect of energy label position on whether or not the PIS was viewed: p = 0.90.

²¹ All p-values < 0,05. Energy label position x version (desktop vs. mobile): p-values > 0,05. Whether or not the energy labels or PISs were viewed did not significantly differ across the countries, p-values > 0,05.

²² Effects of device type: p < 0.05. Effects of country and the country x label position and device type x label position interactions were not significant, all p-values > 0.05.





It was also assessed whether respondents had inspected the product pages. One in five respondents (20%) had clicked on one or more of the product images on the main page to view the product page(s). This could indicate that most respondents were able to make their choice based on the product information provided on the main page (e.g., product image, height, price, and the nested energy label). The impact of the different label positions on choice was not influenced by whether or not respondents had viewed the product pages.²³ More specifically, the position of the energy label also did not significantly influence the choices of respondents who had inspected the products in more detail.

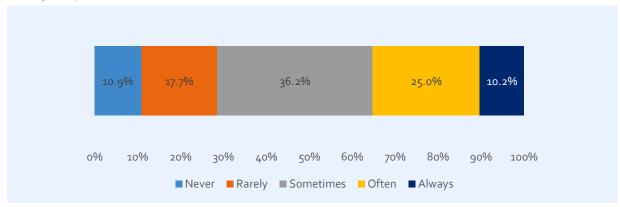
3.2 Shopping basket task

The presence of energy label information on the basket page of a web store might be effective in promoting energy efficient product choices, especially if consumers use the shopping basket to save the product alternatives they are interested in (their "consideration set"), in order to make a final choice from the products in their basket. The compliance study by CLASP (2021) reveals that many web stores do not display energy labels on their basket page, however.²⁴ In section 3.2.1, we first examine how many respondents use online shopping baskets in this manner. Next, we analyse the influence of displaying (versus not) the energy label on the basket page on the energy efficiency of product choices.

3.2.1 Using the product basket to directly compare product alternatives

Respondents (who previously indicated to ever buy household products online²⁵) were asked if they ever place multiple products in an online shopping basket in order to directly compare them. **A clear majority of the respondents (71%) indicated to at least sometimes place multiple product alternatives in their shopping basket to directly compare them (see Figure 3.4).**





 $^{^{23}} p > 0.05.$

²⁴ CLASP (2021). Study to evaluate online energy labelling compliance in the EU.

²⁵ 81,0% of the respondents fell into this group. 15,7% indicated to never buy household products online and 3,3% didn't know.





3.2.2 Choice behaviour

Next, we examine whether the presence vs. absence of the nested energy label affected the likelihood that respondents would choose the most energy efficient product out of three products (with energy classes A, D and F; see Figure 2.2) placed in a hypothetical online shopping basket. To test this, half of the respondents saw a shopping basket with products that each carried an energy arrow. The other half of the respondents saw the same basket, except that the products did not carry energy arrows. The results are provided in Table 3.4 and Figure 3.5.

When the energy arrow was shown next to each fridge-freezer in the online shopping basket, about half of the respondents (50%) chose the most efficient product. In contrast, considerably fewer respondents (33%) chose the most efficient product when the nested label was not presented in this step of the process.²⁶ Thus, **showing the energy arrow for each item in the shopping basket appeared to considerably increase efficient choices**.

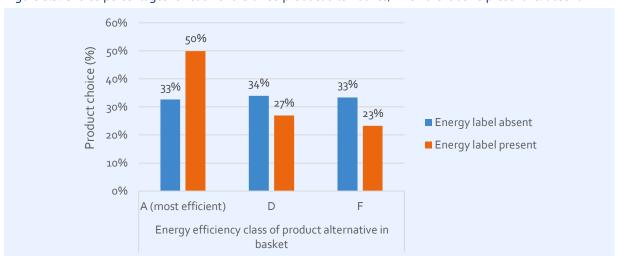


Figure 3.5. Choice percentages for each of the three product alternatives, when the label is present vs. absent

In the figure, the three product alternatives are ordered from the most efficient (left) to the least efficient (right). In the actual task, the products were shown to respondents in random order.

Choice for the most efficient appliance was not influenced by whether a desktop or mobile version of the survey was completed.²⁷ The effects of presenting the product energy labels in the shopping basket did not vary across countries, although respondents of some countries were more likely than others overall to choose the most efficient, with Italian respondents more often choosing the most efficient product (see Table 3.5).²⁸

²⁶ Energy label present vs. absent: p < 0.001.

 $^{^{27}} p = 0.28$

p = 0.93; Effect of country: p < 0.001 (IT vs. other countries: p < 0.05).





Table 3.5. Effects of the presence vs. absence of the energy label and used device type on choice (% of the respondents choosing the most efficient fridge-freezer).

	Total	Device	used		Cou	ntry	
	sample	Desktop	Mobile phone	UK	ΙT	SE	PL
Energy label present	49,8%	50,2%	49,5%	48,6%	60,4%	46,6%	43,8%
Energy label absent	32,6%	33,8%	31,5%	31,1%	41,0%	30,6%	27,9%

3.2.3 Self-rated importance of energy performance in choice

Respondents again indicated what factors they took into account when making their choice (see Figure 3.6 for an overview). Respondents who indicated that they took the energy performance (i.e., efficiency class and/or energy consumption) of the products into account in their decision were much more likely to choose the most efficient alternative out of the three fridge-freezers (61%) compared to respondents who indicated that they did not take this into account (19%).

Table 3.6 shows percentage respondents who indicated to have taken into account energy performance in their choice, overall and broken down by experimental condition and by country. We examine whether the presence vs. absence of the energy arrow impacted the likelihood that respondents either selected "energy consumption per year" or "energy label efficiency class" as important factors in their decision. In line with the findings on choice behaviour, **respondents were significantly more likely to indicate they based their decision on the product's energy performance when the energy arrow was present** (60%) vs. when it was absent (46%). Italian and Polish respondents were more likely than British and Swedish to indicate this.²⁹

²⁹ Effect of country: p < 0.001 (IT and PL vs. UK and SE; UK vs SE: p-values < 0.05; other comparisons were not significant). Self-rated importance of energy performance in choice was not influenced by whether a desktop or mobile version of the survey was completed, p = 0.89.





Figure 3.6. What factors did you take into account when making your choice? *Multiple answers possible*. (shopping basket task)

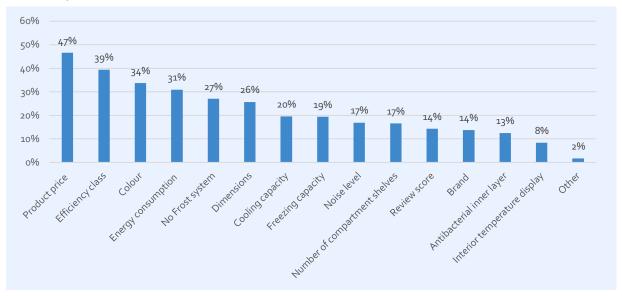


Table 3.6. Effects of the presence vs. absence of the energy label and used device type on self-rated importance of energy performance in choice (% of the respondents indicating to have taken into account either energy consumption or efficiency in their choice).

	Total	Device	used		Cou	ntry	
	sample	Desktop	Mobile phone	UK	ΙT	SE	PL
Energy label present	60,0%	60,9%	59,0%	59,2%	66,4%	52,6%	61,7%
Energy label absent	45,7%	46,5%	44,9%	42,0%	50,2%	37,3%	53,4%

Collectively, these findings suggest that including (vs. not including) an energy efficiency arrow for household products placed in a shopping basket would promote the energy efficiency of consumer choices.

3.2.4 Clicking behaviour

On average, 58% of respondents clicked on at least one of the products shown in the product basket to inspect more detailed product information. Clicking behaviour was not influenced by whether or not the energy label was present vs. absent for products in the basket, whether the survey was completed as a desktop or mobile version, or by the country of the respondent.³⁰

³⁰ Main effects of country and device, and the country x label position and device type x label position interactions were not significant, all p-values > 0,05.





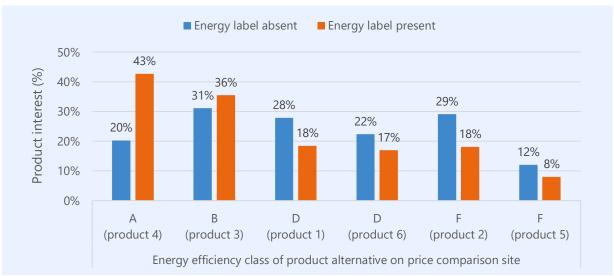
3.3 Price comparison website

Finally, CLASP's (2021) compliance study revealed that compliance rates were lowest for price comparison sites.³¹ Since price comparison sites are not dealers according to the definitions in the regulations, they do not have to fulfil the energy labelling requirements. This does not prevent them from providing energy label information, however. In this section, we investigate the impact of including (vs. not including) energy efficiency arrows on a price comparison website.

3.3.1 Interest in efficient product

To investigate this, respondents were shown a screenshot from a fictive price comparison website listing six different fridge-freezers (see Figure 2.3). Again, for half of the respondents, the products carried an energy arrow and for the other half of the respondents, the products did not carry an energy arrow. Respondents were asked which of the fridge-freezers they would be interested in and would like to obtain more information about. The results are provided in Table 3.7 and Figure 3.7.

Figure 3.7. Percentages of respondents interested in each of the six product alternatives, when the label is present vs. absent



In the figure, the six product alternatives are ordered from the most efficient (left) to the least efficient (right). In the actual task, the products were shown in mixed order (see Figure 2.3).

When the fridge-freezers carried an energy arrow, respondents were **more than twice as likely to indicate to be interested in the most energy efficient fridge-freezer**: when the energy arrow was absent, 20% of all respondents indicated this, versus 43% when the energy arrow was present.³² Note that respondents were not able to further inspect the products (e.g., to view information about energy performance); thus, respondents who did not see the energy labels of products could not base their decision on energy performance of the products.

 $^{^{32}} p < 0.001.$



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³¹ CLASP (2021). Study to evaluate online energy labelling compliance in the EU.





The effectiveness of the energy arrow did not differ between the different viewing modes; thus, the effect of the energy arrow on interest in the most efficient product was similar in the desktop vs. mobile versions.³³

Finally, it was found that interest in the most efficient product was highest in Italy and lowest in Poland. However, the effectiveness of the energy arrow in increasing interest in the most efficient product was similar across the countries.³⁴

Table 3.7. Effects of the presence vs. absence of the energy label and used device type on choice (% of the respondents indicating to be interested in the most efficient fridge-freezer).

	Total	Device	used		Cou	ntry	
	sample	Desktop	Mobile phone	UK	ΙT	SE	PL
Energy label present	42,7%	44,7%	40,6%	41,9%	50,2%	44,4%	34,1%
Energy label absent	20,3%	21,0%	19,5%	22,2%	22,6%	19,4%	16,8%

3.3.2 Liking to filter on energy performance

After this, respondents were asked, if they were to search for a fridge-freezer on a price comparison website, which of characteristics they would you like to be able to filter their results on. A list of product characteristics was provided. This question was asked to gain insight into whether consumers would value being able to filter on energy performance of products on price comparison websites. In turn, the availability of such a filter might promote efficient choices.

The findings are presented in Figure 3.8. Efficiency class and energy consumption were rated as 2nd and 3rd most important characteristic, right after product price. **More than one in six (63%) indicated that they would like to filter on energy-related information** (energy efficiency class and/or energy consumption) – suggesting that being able to filter on energy-related information is as important to consumers as being able to filter on produce price (with 62% of respondents indicating they would like to be able to filter on this). Italian (58%) and Polish (58%) respondents more often indicated liking to filter on energy-related information than British (51%) and Swedish (45%) respondents.³⁵

³³ Energy arrow presence (vs. absence) x device type: p = 0.54.

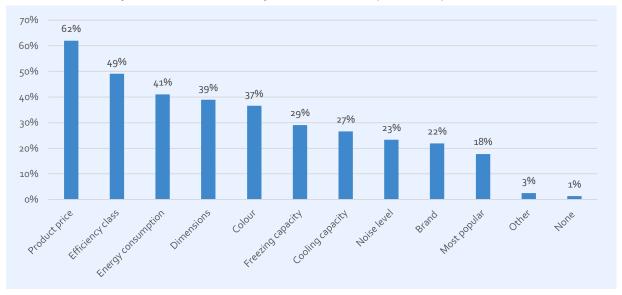
³⁴ Effect of country: p < 0.001; Energy arrow presence (vs. absence) x country: p = 0.18. All country comparisons were significant at p < 0.05, except UK vs. SE.

³⁵ Effect of country: p < 0,001 (all comparisons are significant at p < 0,05, except IT vs. PL).





Figure 3.8. If you were to search for a fridge-freezer on a price comparison website, which of the following characteristics would you like to be able to filter your results on? *Multiple answers possible*.



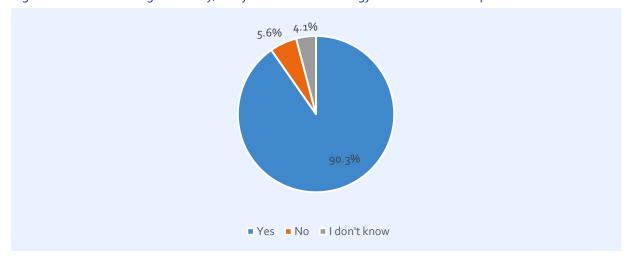
3.4 Post-experiment questionnaire

After the experimental part, respondents answered some more general questions. The results are presented in this section.

3.4.1 Familiarity with the energy label

Respondents were asked whether they had ever seen an energy label for household products prior to starting the survey. Nine in ten respondents (90%) indicated to be familiar with the label (see Figure 3.9).

Figure 3.9. Prior to starting this survey, had you ever seen an energy label for household products?



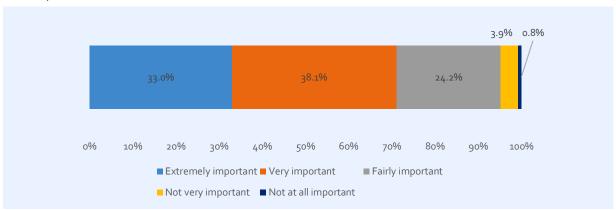




3.4.2 Importance of energy consumption

Respondents were also asked how important energy consumption is to them when they buy a refrigerator or freezer. The results are provided in Figure 3.10. The majority of respondents (95%) indicated to find energy consumption at least fairly important. A small percentage (5%) indicated to find energy consumption not very (4%) or not at all (1%) important.

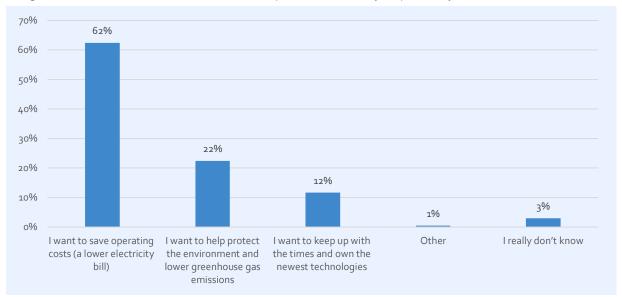
Figure 3.10. How important is energy consumption to you when you buy a refrigerator or freezer (including fridge-freezers)?



3.4.3 Most important reason for paying attention to energy consumption

Next, respondents – except the few who indicated to find energy consumption not at all important³⁶ – were asked what the most important reason is for them to pay attention to energy consumption when buying a new refrigerator or freezer. The results are provided in Figure 3.11. Six in ten respondents (62%) indicated the most important reason was to save operating costs. About one in five respondents (22%) indicated the most important reason was to help protect the environment.

Figure 3.11. There are various reasons why people pay attention to energy consumption when buying a new refrigerator or freezer. What would be the most important reason for you, personally?



³⁶ 0,8% of the total sample







3.4.4 Product category expertise and energy consciousness

Respondents were also asked about their product category expertise (knowledge about refrigerators and freezers) and energy consciousness by indicating to what extent they agreed or disagreed with four statements. The results are shown in Figure 3.12.

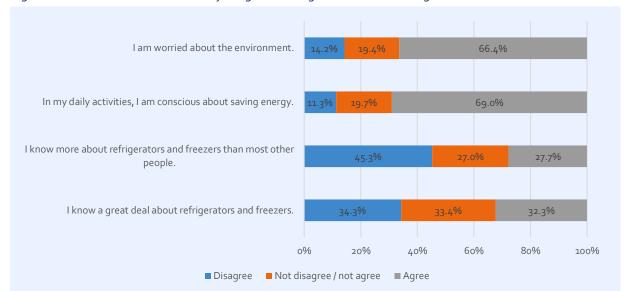


Figure 3.12. Please indicate how much you agree or disagree with the following statements.

3.4.5 Search and purchase mode

Respondents were asked, in case they would want to buy a new refrigerator or freezer, if they would search for different options and purchase one online. If so,³⁷ respondents were asked whether they would do this on their mobile phone. The results are summarised in Figures 3.13-3.16.

A large majority of the respondents indicated they would possibly, probably or certainly look at different options online (94%) and/or purchase the product online (86%; see Figure 3.13). Further, out of the respondents who did not rule out searching for/purchasing products online, more than 8 in 10 (84%) would possibly, probably or definitely search for options on their mobile phone, and 7 in 10 (71%) would possibly, probably or definitely purchase the product on their mobile phone (see Figure 3.15). Given that searching for and purchasing products online and the usage of different modes to do this (including mobile) appear very common occurrences, this highlights the importance of ensuring optimal energy label displays across desktop and mobile settings.

Whether respondents would search for vs. purchase a refrigerator or freezer online depends on their age (see Figure 3.14).³⁸ Older respondents more frequently report that they would "probably" or "definitely" search for information online than the youngest age group (18-24), while online purchase intentions are highest in the middle age group (35-44) and relatively low in the oldest age group (55-

³⁸ Age differences in probability of searching for products online: p < 0.001; age differences in probability of purchasing products online: p < 0.001.



³⁷ Respondents who indicated they would "definitely not" search for (1,9%)/purchase (3,8%) a fridge or freezer online did not answer the question about whether they would search for/purchase a fridge or freezer on their mobile phone.





65). Furthermore, while men and women are equally likely to search for information online, men are slightly more likely than women to make the purchase online (53% vs. 50% "probably" or "definitely").³⁹

Figure 3.13. If you were planning to buy a new refrigerator or freezer, would you search for different options online/purchase it online?

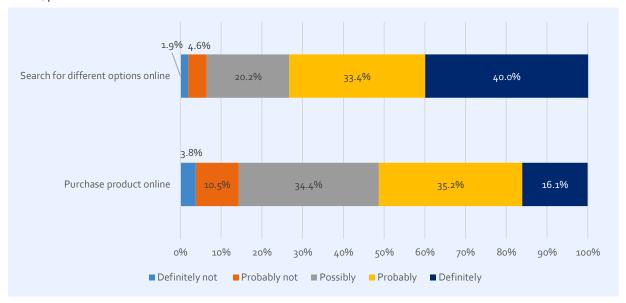
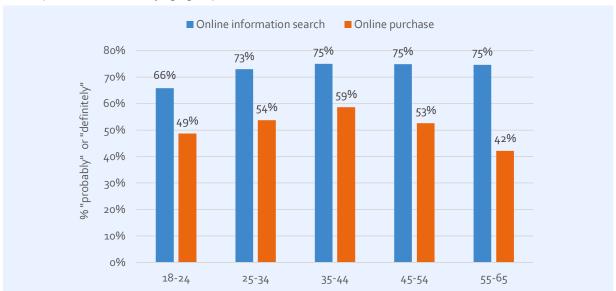


Figure 3.14. If you were planning to buy a new refrigerator or freezer, would you search for different options online/purchase it online?, by age group



Whether or not consumers would search for vs. purchase a refrigerator or freezer online *via their mobile phone* also depends on their age.⁴⁰ Older respondents are less likely to search for information and purchase the product online via their mobile phone than younger respondents (see Figure 3.16). Furthermore, while women would be slightly more likely to search for information via their mobile

³⁹ Gender differences in probability of searching for products online: p = 0.54; gender differences in probability of purchasing products online: p < 0.01.

⁴⁰ Age differences in probability of searching for products online via their mobile phone: p < 0.001; age differences in probability of purchasing products online via their mobile phone: p < 0.001.





phone than men (60% vs. 55% "probably" or "definitely"), men and women are equally likely to make the purchase via their mobile phone.⁴¹

Figure 3.15. If you were planning to buy a new refrigerator or freezer online, would you search for different options/purchase it on your mobile phone?

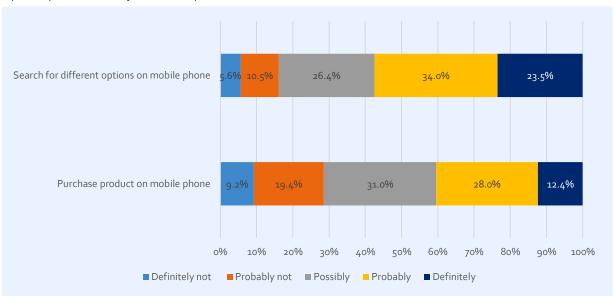
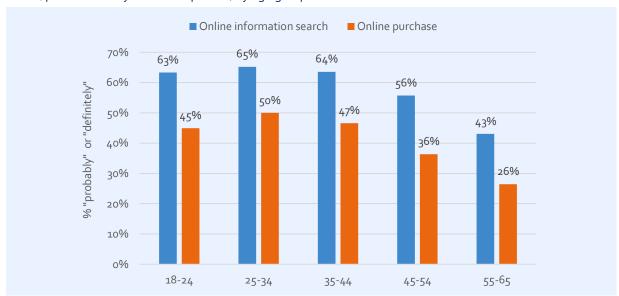


Figure 3.16. If you were planning to buy a new refrigerator or freezer, would you search for different options online/purchase it on your mobile phone?, by age group



⁴¹ Gender differences in probability of searching for products online via their mobile phone: p < 0,001; gender differences in probability of purchasing products online via their mobile phone: p = 0,58.





4 Summary and conclusion

The aim of the current study was to examine the influence of (different positions of) the energy label on different webpages in a fictive web store on consumer choices.

An experiment was conducted in which respondents were asked to choose one of six product alternatives (fridge-freezers) in a fictive online shopping task. The position of the energy label was varied either on the main page (showing all six models) or on the product pages (providing more specific information about a product). On the main page, it was examined whether varying the price-label proximity and label visibility impacted the energy efficiency of consumer choices. On the product pages, effects on consumer choices were studied of: (1) providing an energy label vs. only showing energy information in the product specifications, (2) showing the full energy label in the picture gallery vs. as a nested energy label, and (3) displaying the nested energy label in direct proximity of vs. further away from the product price.

Further, the study aimed to investigate whether the device type used to complete the survey (desktop or mobile) impacted consumer choices, and whether the presence (vs. absence) of the energy arrow next to products in a shopping basket and a price comparison website would influence consumer decision-making.

The main results of the study are described in the next sections.

4.1 Effects of different positions of the energy label in a web store (main page, product pages, basket page)

Overall, **the exact position of the energy label** on the main page and product pages in the fictive web store **did not consistently impact consumer decision-making**: overall, respondents in all experimental conditions were equally likely to choose the most efficient product and to report having taken into account energy information in their choice. The generally very high familiarity (with 90% of respondents recognizing the label) with the energy label might have played a role in the lack of differences between the conditions. Previous research suggests that consumers who are familiar with a label notice it more easily and actively seek it out.⁴² Another, related study suggests that environmentally-conscious consumers are likely to search for and use environment-related information, regardless of its presentation format.⁴³ This might have led to the majority of respondents noticing and using the energy label even when price proximity and visibility was lower in some conditions.

_..

⁴² Thøgersen, J., Haugaard, P., & Olesen, A. (2010). Consumer responses to ecolabels. *European Journal of Marketing, 44*, 1787-1810; van Herpen, E., Seiss, E., & van Trijp, H. C. (2012). The role of familiarity in front-of-pack label evaluation and use: A comparison between the United Kingdom and The Netherlands. *Food Quality and Preference, 26(1),* 22-34.

⁴³ Grankvist, G., Dahlstrand, U., & Biel, A. (2004). The impact of environmental labelling on consumer preference: Negative vs. positive labels. Journal of Consumer Policy, 27(2), 213-230.





In addition, it is relevant to note that these findings do not inform about the effectiveness of the energy label per se, since no comparisons with a no label control condition were made (i.e., it is unknown how often respondents would have chosen the most efficient products if no label had been present on the main and product pages). Previous research shows that the display (vs. not) of energy label information on the main page is effective in promoting energy efficient product choices. For instance, in a study by Elsen and Leenheer (2021), the proportion of consumers selecting the most energy-efficient product as part of their consideration set increased with about 6%-point if an energy arrow was present (vs. absent) on the main page.⁴⁴ The present study adds to this, suggesting that the exact location of the energy label doesn't make a difference. Of note, this does not mean that price-label proximity or visibility of the energy label is irrelevant; rather, within the tested range of proximity and visibility levels, choices remained unaffected.

Very few respondents actually clicked on an energy arrow (1%) or a product information sheet (3%). This could suggest that respondents either found the more detailed information not very important when making a choice (or looked up more detailed information in the product specifications on the product pages), or did not know about the existence of the product information sheet or the possibility to open the full label by clicking on the energy arrow.

Finally, a majority of respondents (71%) indicated to at least sometimes place multiple product alternatives in their shopping basket to directly compare them. When products in the fictive online shopping basket carried an energy arrow (vs. not), respondents were much more likely to choose an efficient product alternative, with 50% of the respondents indicating to choose the most efficient product when the energy arrow was present in the shopping basket, compared with 33% when it was absent. Thus, positioning the (nested) energy label next to products in a shopping basket could promote efficient consumer choices.

4.2 Effects of the presenting the energy arrow on a price comparison website

When providing the energy arrow next to products on the price comparison website, 42% of respondents indicated to be interested in the most efficient product, versus 20% when the energy arrow was absent. Thus, providing the (nested) energy label on a price comparison website may be effective in promoting more energy efficient consumer choices.

4.3 Effects of device type

Overall, the device type used to complete the experiment had weak effects on choices. Specifically, when completing the experiment in the desktop (vs. mobile) version, respondents (1) were slightly more likely to indicate they had taken energy efficiency into account when choosing between the product alternatives in the shopping task, and (2) clicked slightly more often on the nested energy labels and product information sheets. This finding may be in part explained by the different

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⁴⁴ Elsen, M., & Leenheer, J. (2022). Energy efficiency of consideration sets and choices: the impact of label format. European *Journal of Marketing*, vol. 56 (8), 2484-2505.





demographics of desktop vs. mobile users. For example, mobile users were younger and it could be that they attributed more importance to the product price than to energy efficiency.

4.4 Overall conclusion

In sum, the present findings suggest that the provision (vs. not) of an energy label on different pages in a webstore can have marked effects on the energy efficiency of consumer choices, whereas the exact position of the (nested) energy label and the device type that is used have much more limited effects, if any.





Appendices





A Unweighted sample characteristics

Table A.1. Sample characteristics by device type and country (unweighted)

	Total sample	Device used: desktop	Device used: mobile phone	United Kingdom	Italy	Sweden	Poland
Gender							
Male	46,9%	51,8%	41,9%	47,2%	48,0%	48,1%	44,2%
Female	52,6%	47,7%	57,2%	51,6%	51,7%	51,1%	55,9%
Other	0,6%	0,5%	0,7%	1,2%	0,3%	0,8%	0,0%
<u>Age</u>							
18-24	12,6%	8,7%	16,7%	14,0%	10,9%	14,2%	11,5%
25-34	21,1%	18,4%	23,8%	22,0%	17,1%	23,2%	22,2%
35-44	20,2%	20,6%	19,7%	20,7%	20,1%	17,4%	22,5%
45-54	23,1%	23,8%	22,5%	22,7%	26,2%	22,8%	21,0%
55-65	23,0%	28,5%	17,4%	20,7%	25,8%	22,5%	22,9%
Education level							
Low/middle	54,0%	49,7%	58,3%	38,5%	60,0%	61,5%	55,9%
High	46,0%	50,3%	41,7%	61,5%	40,0%	38,5%	44,1%
Financial situation*	3,2	3,2	3,2	3,3	3,1	3,2	3,2





B Full survey

Study specifications	
Respondent sample	Aged 18-65, nat. rep. on gender, age, and geographical region.
Sample size	N = 1,200 per country
Country sample	UK, Italy, Sweden, Poland
Survey duration	8 minutes

X1	Energy label position: main page	Energy label/class position: product page	Number of respondents per country
1	High visibility/high proximity to price	Energy class in product specifications only	200
2	High visibility/low proximity to price	Energy class in product specifications only	200
3	Low visibility/low proximity to price	Energy class in product specifications only	200
4	Low visibility/low proximity to price	Full label in picture gallery	200
5	Low visibility/low proximity to price	Energy class in nested label (link to full label) – high proximity to price	200
6	Low visibility/low proximity to price	Energy class in nested label (link to full label) – low proximity to price	200

X2	Display mode	Number of respondents per country
1	Desktop version	600
2	Mobile version	600

Х3	Energy label presence in shopping basket and price comparison sites	Number of respondents per country
1	Energy label present	600
2	Energy label absent	600

Scripter: randomly assign respondents to all combinations of X1 and X3 within all combinations of X2 and country.

PLEASE NOTE:

The images names in this document correspond to the <u>desktop</u> versions for the <u>UK</u>.

- All mobile versions of the images are preceded by "M_" (e.g., "M_prod_S_P1, M_EL_P1, etc).
- Images for the remaining countries (Italy, Sweden and Poland) are preceded by a country code: "IT_", "SE_", "PL_").
- So the mobile version of image "Main_H_P1.jpg" for Sweden is "SE_M_Main_H_P1.jpg".





Questionnaire

Part 1: Introduction text and screening questions

Welcome!

Thank you for your interest in this study. The survey is being conducted by Ipsos and Centerdata.

We are inviting you to take part in this survey about online shopping. We are interested in how people form impressions of the products they encounter when they shop online, and how they make purchase decisions. The survey will take about 8 minutes to complete.

Your answers throughout this survey will be kept **confidential**. The client will not receive any information that would allow you to be identified, such as your name. Your responses will be grouped together with the responses provided by all participants.

SO.

Base: for desktop users only (X2=1)

This questionnaire contains images. It is important for this research that you view these images at a certain size. Therefore, we would like to ask you to make sure that your browser zoom is set to 100%.

You can easily do this by simultaneously pressing the "Ctrl" and "0" (zero) button on your keyboard.

After your browser zoom is set to 100%, please leave it at 100% while completing the questionnaire.

If nothing happens, your browser zoom was likely already set to 100%.

S1. Base: All [Standard Screener: DO NOT MODIFY OR TRANSLATE] D3. YEAR/MONTH. What is your date of birth? YEAR **1910 1910 —** ... **2015** 2015 ☐ MONTH 1 January _2 February ☐ _3 March _4 April _6 June _7 July ☐ _8 August _9 September

_-.





_12 December

[Standard Screener: DO NOT MODIFY OR TRANSLATE]

QUOTAGERANGE [Hidden]. Hidden Question - QUOTAGERANGE "this is a dummy question that will hold age breaks" for the quotas that should be defined by the PM; it CAN be edited and lines can be added to meet survey objectives.

- O _18_24 "18-24",
- O _25_34 "25-34"
- O _35_44 "35-44"
- O _45_54 "45-54"
- O _55_65 "55-65"

[TERMINATE IF LESS THAN 18 OR HIGHER THAN 65]

[Standard Screener: DO NOT MODIFY OR TRANSLATE]

RESP_AGE [Hidden]. Hidden Question - RESP_AGE "this is a dummy question that will hold age" USE RESP_AGE [Hidden] response list

[Standard Screener: DO NOT MODIFY OR TRANSLATE]

Scripter: recode Age into Q1

S2.

Base: All

GENDER_NONBINARY_. Are you...?

- O _1 Male
- O _2 Female
- O _3 Other
- O _4 Prefer not to answer

Scripter: recode Gender into Q2

S3. [S]

In which region do you live?

Scripter: country specific list, see Excel 'S3_Region'

999. Don't know/No answer

Scripter: IF S3=999: SCREENOUT

Part 2a: Choice task 1 (simulated webstore)

Scripter instruction

The online shop consists of two layers ("main page" and "product page") with clickable areas. Respondents should be able to go back and forth between the main page (product overview) and individual product pages, in a realistic manner.

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On the **main page**, six product alternatives are presented below each other. Each product image contains four clickable areas:

- **Energy label arrow**: If the respondent clicks on the arrow, the full energy label should open in a pop-up or new tab. Note that the position of the arrow varies depending on X1.
- **Product information sheet**: If the respondent clicks on "Product information sheet", the product information sheet should open in a new tab. <u>Note that the position of the Product information sheet link varies depending on X1</u>.
- **Add to cart**: Respondents make a product choice (Q1) if they click on this. They proceed to Q2.
- **Anywhere else on the image**: If the respondents clicks anywhere else on the "main" image of a certain product alternative, the corresponding **product page** opens (new page).

Each **product page** contains the following clickable areas:

- **Energy label arrow (if X1 = 5 or 6)**: If the respondent clicks on the arrow, the full energy label should open in a pop-up or new tab. <u>Note that the position of the arrow varies depending on X1</u>.
- **Product information sheet (if X1 = 5 or 6)**: If the respondent clicks on "Product information sheet", the product information sheet should open in a new tab. <u>Note that the position of the Product information sheet link varies depending on X1</u>.
- **Picture gallery thumbnails:** Respondents should be able to click on individual pictures (thumbnails) to enlarge them. The gallery contains three or four thumbnails, <u>depending on X1</u>.
- Add to cart: Respondents make a product choice (Q1) if they click on this. They proceed to Q2.

[Screen 1: Scenario]

IMPORTANT - PLEASE READ CAREFULLY

Now, imagine that you want to buy a new fridge-freezer online. You visit the online shop of a well-known white goods retailer and search for fridge-freezers.

On the next screen, you will see a web page with several fridge-freezers that the retailer offers. Which of the fridge freezers would you choose?

We would like you to browse the web page as you would in a real web shop. You can click on each product for more detailed product information. You can browse for as long as you like until you have decided on the fridge-freezer of your choice. Once you have made your choice, you can select your preferred fridge-freezer by clicking the 'Add to cart'-button. (Rest assured, this is a simulation, so you are not actually buying anything.)

[Screen 2A: Main page]

Scripter: Ideally, respondents make a choice by clicking "add to cart." If that is not feasible, we can alternatively record the product choice via the question below (In that case, please show answers in the <u>same</u> (random) order as the product images on the main page).

When 'add to cart' is clicked, add a notification or question to ask to confirm that they want to choose this product: "Are you sure you want to choose this fridge-freezer?"

1 "Yes"

2 "No, go back"

_--





(Scripter: question text not shown to respondents)

Q1. If you had to make a choice, which of these fridge-freezers would you choose?

- 1 HOBA MNAP10L
- 2 HOBA RAS560H
- 3 Coolfix GPL500R45
- 4 Coolfix JJ056AH00
- 5 **EKB** EL100.1024
- 6 **EKB** EL100.2001

Images to be shown on the main page (layer 1):

	Main naga imagaa		Clickab	le areas	
X1	Main page images (show αll, in a list, in random order)	Energy label arrow, links to (new tab):	Product information sheet, links to (new tab):	Add to cart, links to (new page):	Anywhere else on the image, links to (new page):
1	Main_H_P1.jpg - Main_H_P6.jpg	EL_P1.jpg - EL_P6.jpg	PIS_P1.jpg - PIS_P6.jpg	End of task (go to Q2)	Prod_S_P1.jpg - Prod_S_P6.jpg
2	Main_M_P1.jpg - Main_M_P6.jpg	EL_P1.jpg - EL_P6.jpg	PIS_P1.jpg - PIS_P6.jpg	End of task (go to Q2)	Prod_S_P1.jpg - Prod_S_P6.jpg
3	Main_L_P1.jpg - Main_L_P6.jpg	EL_P1.jpg - EL_P6.jpg	PIS_P1.jpg - PIS_P6.jpg	End of task (go to Q2)	Prod_S_P1.jpg - Prod_S_P6.jpg
4	Main_L_P1.jpg - Main_L_P6.jpg	EL_P1.jpg - EL_P6.jpg	PIS_P1.jpg - PIS_P6.jpg	End of task (go to Q2)	Prod_G_P1.jpg - Prod_G_P6.jpg
5	Main_L_P1.jpg - Main_L_P6.jpg	EL_P1.jpg - EL_P6.jpg	PIS_P1.jpg - PIS_P6.jpg	End of task (go to Q2)	Prod_AH_P1.jpg - Prod_AH_P6.jpg
6	Main_L_P1.jpg - Main_L_P6.jpg	EL_P1.jpg - EL_P6.jpg	PIS_P1.jpg - PIS_P6.jpg	End of task (go to Q2)	Prod_AL_P1.jpg - Prod_AL_P6.jpg

Scripter: The number behind the "P" in the image names refers to the product alternative (6 in total). So all images with "P1" in their names (Main_H_P1.jpg, Prod_S_P1.jpg, EL_P1.jpg, PIS_P1.jpg, etc.) all belong the product alternative 1, all images with "P2" (Main_H_P2.jpg, Prod_S_P2.jpg, EL_P2.jpg, PIS_P2.jpg, etc.) all belong to product alternative 2, etcetera.

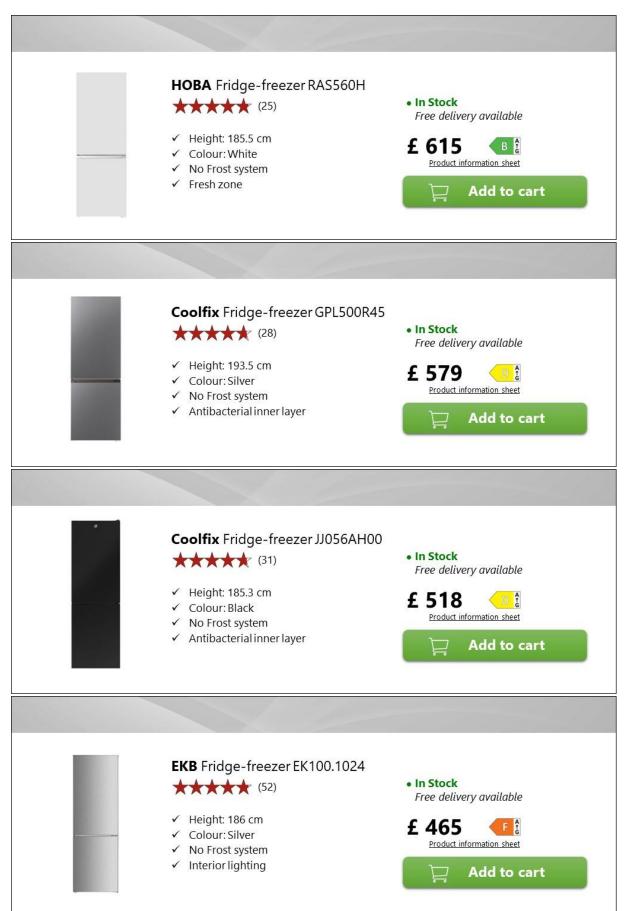
Main page images should be presented in random order.

Example **Main page** (for X1 = 1: Main_H_P1.jpg - Main_H_P6.jpg):















[Screen 2B: Product page]

Scripter: If a respondent clicks on a certain product on the main page, the individual product page (a page with more detailed product information) should open (layer 2). There should be a "back" button, so that respondents can go back to the main page (layer 1): 'Click here to go back to the main page'

When 'add to cart' is clicked, add a notification or question to ask to confirm that they want to choose this product: "Are you sure you want to choose this fridge-freezer?"

1 "Yes"

2 "No, go back"

If we think it is not sufficiently clear from the images themselves how the "web store" works, we can add the instructions in purple below.

Images to be shown on the **product pages (layer 2):**

Хı	Product page	Clickable areas					
	images (show the one corresponding to the product that is clicked on)	Product information sheet, links to (new tab):	eet, links to (new links to (new tab):		Add to cart, links to (new page):		
1	Prod_S_P1.jpg – Prod_S_P6.jpg	PIS_P1.jpg – PIS_P6.jpg	N/A	G_PX_1.jpg- G_PX_3.jpg	End of task (go to Q2)		
2	Prod_S_P1.jpg — Prod_S_P6.jpg	PIS_P1.jpg – PIS_P6.jpg	N/A	G_PX_1.jpg- G_PX_3.jpg	End of task (go to Q2)		
3	Prod_S_P1.jpg – Prod_S_P6.jpg	PIS_P1.jpg – PIS_P6.jpg	N/A	G_PX_1.jpg- G_PX_3.jpg	End of task (go to Q2)		
4	Prod_G_P1.jpg — Prod_G_P6.jpg	PIS_P1.jpg – PIS_P6.jpg	N/A	G_PX_1.jpg- G_PX_4.jpg	End of task (go to Q2)		
5	Prod_AH_P1.jpg – Prod_AH_P6.jpg	PIS_P1.jpg – PIS_P6.jpg	EL_P1.jpg – EL_P6.jpg	G_PX_1.jpg- G_PX_3.jpg	End of task (go to Q2)		
6	Prod_AL_P1.jpg – Prod_AL_P6.jpg	PIS_P1.jpg – PIS_P6.jpg	EL_P1.jpg – EL_P6.jpg	G_PX_1.jpg- G_PX_3.jpg	End of task (go to Q2)		





Example **Product page** (for X1 = 1, product alternative 1 (P1): Prod_S_P1.jpg):







HOBA Fridge-freezer MNAP10L

**** (49)

In Stock

Free delivery available

£ 685



Add to cart

- ☐ Connect and place in the desired spot £ 21.99
- ☐ Reverse door direction to the left £ 30.99







Product description

Keep your food fresh for longer with our spacious HOBA MNAP10L. The door cooling and air circulation keep the temperature in this fridge balanced and even on every shelf. The MNAP10L has two fresh zones to store fruit, vegetables, meat and fish for longer. No Frost technology prevents condensation in the refrigerator and ice formation in the freezer.

Product specifications

General

Freestanding
Fridge freezer combination
Compressor
35 dB
Silver
186 cm (Height) x 59.5 cm (Width) x 68.2 cm (Depth)

Cooling characteristics

Net contents of cooling compartment	234 L
Antibacterial inner layer	No
Number of compartment shelves	4
Fresh zone	Yes
Interior temperature display	Ves

Freezing characteristics

Net contents of freezer compartment	107 L
Number of freezer compartments	3
No Frost system	Yes

Energy features

Energy label	A
Annual energy consumption	98 kWh





Scripter: The images have a long format intentionally, so that respondents have to **scroll down** to be able to read all information (as in reality).

Scripter: The following click/reaction time data should be saved:

- Mouse-clicks on the **energy label arrow** (to see the full label): incidence (yes/no) per product and per page (main or product page) (so we can determine how many arrows have been clicked on i.e., for how many products, and where main page or product page);
- For X1 = 4: Mouse-clicks on the **fourth thumbnail in the photo gallery** (full energy label): incidence (yes/no) per product;
- Mouse-clicks on the link to the **product information sheet**: incidence (yes/no) per product and per page (main or product page) (so we can determine how many product information sheets have been looked at i.e., for how many products, and where main page or product page).
- Total time spent on each **full energy label** after clicking on the energy label arrow or fourth thumbnail in the photo gallery, per product and per page (main page or product page);
- Total time spent on each **product information sheet** after clicking on the link to this sheet, per product and per page (main page or product page);
- Total time spent on the shopping task
- Total time spent on the product fiche(s)

[Screen 3: reasons for choice]

Q2. What factors did you take into account when making your choice? *Multiple answers possible.* Scripter: randomise all answers options except "Other, namely..."

- 1 Review score
- 2 Cooling capacity
- 3 Freezing capacity
- 4 Product price
- 5 Energy consumption per year
- 6 Energy label efficiency class (A-G)
- 7 Noise level
- 8 Brand
- 9 Colour
- 10 Dimensions
- 11 Presence of an antibacterial inner layer
- 12 Number of compartment shelves
- 13 Presence of an interior temperature display
- 14 Presence of a No Frost system
- 15, Other, namely...

Part 2b: Choice task 2 (shopping basket)

[Screen 4: shopping basket]

Now, imagine that out of the six fridge-freezers you considered, you have selected three that you seriously consider. You have added these three options to your online shopping basket to be able to better compare them. Now, you want to make your final choice.





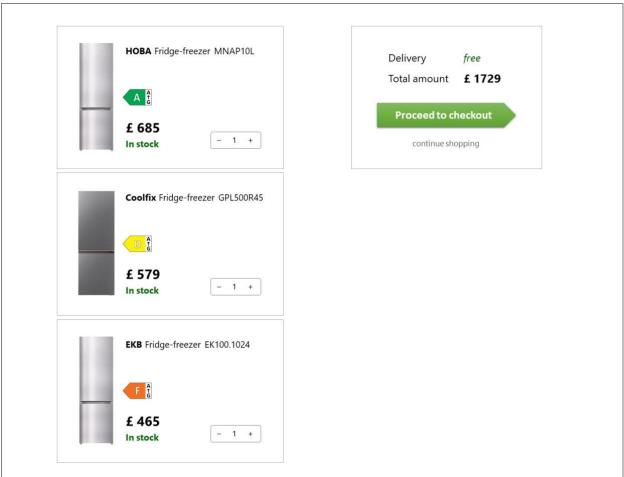
Below, you can see your online shopping basket. You can click on each product for more detailed product information.

If X3 = 1, display basket1_EL.jpg, basket3_EL.jpg, basket5_EL.jpg and checkout.jpg
If X3 = 2, display basket1_noEL.jpg, basket3_noEL.jpg, basket5_noEL.jpg and checkout.jpg

Scripter:

- Display checkout.jpg on the <u>right side</u> in desktop version and at the bottom, <u>below</u> the three product images in the mobile version.
- The order of basket1_(no)EL.jpg, basket3_(no)EL.jpg and basket5_(no)EL.jpg should be randomised.
- Respondents should be able to click on each of the three images (basket1_(no)EL.jpg, basket3_(no)EL.jpg and basket5_(no)EL.jpg). If they do, the corresponding product page Prod_S_P1.jpg, Prod_S_P3.jpg or Prod_S_P5.jpg from Choice task 1 should open (here, without clickable areas), and respondents should be able to go back to the basket overview after inspecting the information on the product page.
- if they click 'add to cart' it should show an 'error' pop-up that says: 'This product is already in your shopping cart'.
- Please record whether respondents clicked on each of the products in the basket.

Example **Shopping basket** (for X3 = 1: basket1_EL.jpg, basket3_EL.jpg, basket5_EL.jpg and checkout.jpg):







Q3. If you had to make a choice, which of these fridge-freezers would you choose?

- 1 HOBA MNAP10L
- 2 Coolfix GPL500R45
- 3 **EKB** EL100.1024

[Screen 5: reasons for choice]

Q4. What factors did you take into account when making your choice? *Multiple answers possible.* Scripter: randomise all answer options except "Other, namely..."

- 1 Review score
- 2 Cooling capacity
- 3 Freezing capacity
- 4 Product price
- 5 Energy consumption per year
- 6 Energy label efficiency class (A-G)
- 7 Noise level
- 8 Brand
- 9 Colour
- 10 Dimensions
- 11 Presence of an antibacterial inner layer
- 12 Number of compartment shelves
- 13 Presence of an interior temperature display
- 14 Presence of a No Frost system
- 15, Other, namely...

[Screen 6: use of basket to form consideration set: screening]

Q5. Do you ever buy household products online?

- 1 Yes
- 2 No, never
- 3 I don't know

[Screen 7: use of basket to form consideration set]

If Q5 = 1

Below, you see the online shopping basket once more.

If X3 = 1, display basket1_EL.jpg, basket3_EL.jpg, basket5_EL.jpg and checkout.jpg
If X3 = 2, display basket1_noEL.jpg, basket3_noEL.jpg, basket5_noEL.jpg and checkout.jpg

When looking to buy a certain household product online (such as a fridge-freezer, a washing machine, a dishwasher, or a television), people may add multiple products to their online shopping basket, with the specific aim to be able to directly compare these alternatives when making a final choice.

Q6. Do <u>you</u> ever add multiple household products to your online shopping basket in order to be able to directly compare these alternatives?

_-.





- 1 Never
- 2 Rarely
- 3 Sometimes
- 4 Often
- 5 Always

Part 2c: Choice task 3 (price comparison site)

[Screen 8: choice on price comparison website]

Now, please imagine that you want to buy a fridge-freezer one last time. This time, imagine that you visit a price comparison website and search for fridge-freezers there. Below, you see some of your search results.

If X3 = 1, display comparison_EL.jpg
If X3 = 2, display comparison_noEL.jpg

Example **Price comparison website** (for X3 = 1: comparison_EL.jpg)



- **Q7.** Which of these fridge-freezers would you be interested in and would you like to obtain more information about? *Multiple answers possible.*
- 1 Fridge-freezer 1
- 2 Fridge-freezer 2
- 3 Fridge-freezer 3
- 4 Fridge-freezer 4
- 5 Fridge-freezer 5
- 6 Fridge-freezer 6
- 7 None of these (single answer)

[Screen 9: questions about price comparison website]

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Below, you see part of your search results once more.

If X3 = 1, display comparison_EL.jpg
If X3 = 2, display comparison_noEL.jpg

On the price comparison website, you can apply a filter to your search results. This allows you to see a list of the fridge-freezers that meet a certain requirement (such as a maximum price).

Q8. If you were to search for a fridge-freezer on a price comparison website, which of the following characteristics would you like to be able to filter your results on? *Multiple answers possible*. *Scripter: randomize answer options 1-10.*

- 1 Most popular
- 2 Cooling capacity
- 3 Freezing capacity
- 4 Product price
- 5 Energy consumption per year
- 6 Energy label efficiency class (A-G)
- 7 Noise level
- 8 Brand
- 9 Colour
- 10 Dimensions
- 11 Other
- 12 None

Part 3: Survey

[Screen 10: introduction]

Finally, in this last part of the survey, we would like to ask you a few more general questions.

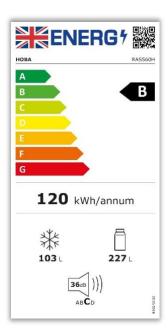
[Screen 11: label familiarity]

Many electronic household products carry an energy label. Below, you see the energy label for fridges and freezers (including fridge-freezers).

Display EL_P2.jpg







- **Q9.** Prior to starting this survey, had you ever seen an energy label for household products?
- 1 Yes
- 2 No
- 3 I don't know

[Screen 12: Importance of energy consumption]

- **Q10.** How important is energy consumption to you when you buy a refrigerator or freezer (including fridge-freezers)?
- 1 Extremely important
- 2 Very important
- 3 Fairly important
- 4 Not very important
- 5 Not at all important

[Screen 13: reasons for saving energy]

If Q10 < 5:

- **Q11**. There are various reasons why people pay attention to energy consumption when buying a new refrigerator or freezer. What would be the most important reason for you, personally? *Scripter: randomise answer options 1-3.*
- 1 I want to save operating costs (a lower electricity bill)
- 2 I want to help protect the environment and lower greenhouse gas emissions
- 3 I want to keep up with the times and own the newest technologies
- 4 Other, namely...
- 5 I really don't know

[Screen 14: Self-reported product category expertise/pro-environmental self-identity] All respondents:

_-.





Q12. Please indicate how much you agree or disagree with the following statements.

		Stro	Strongly Disagree				Strongly	
		Disa				agree		
1	I know a great deal about refrigerators and freezers.	1	2	3	4	5	6	7
2	I know more about refrigerators and freezers than most other people.	1	2	3	4	5	6	7
3	In my daily activities, I am conscious about saving energy.	1	2	3	4	5	6	7
4	I am worried about the environment.	1	2	3	4	5	6	7

[Screen 15: Online searching]

Q13new. If you were planning to buy a new refrigerator or freezer, would you <u>search for different</u> <u>options</u> online?

- 1 Definitely not
- 2 Probably not
- 3 Possibly
- 4 Probably
- 5 Definitely

[Screen 16: Online searching mobile]

If Q13new > 1:

Q14new. If you were planning to buy a new refrigerator or freezer online, would you <u>search for different options</u> on your mobile phone?

- 1 Definitely not
- 2 Probably not
- 3 Possibly
- 4 Probably
- 5 Definitely

[Screen 17: Online shopping]

Q13. If you were to buy a new refrigerator or freezer, would you <u>purchase</u> it online?

- 1 Definitely not
- 2 Probably not
- 3 Possibly
- 4 Probably
- 5 Definitely

[Screen 18: Online shopping mobile]

If Q13 > 1:

Q14. If you were to buy a new refrigerator or freezer online, would you <u>purchase</u> it on your mobile phone?

- 1 Definitely not
- 2 Probably not
- 3 Possibly

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- 4 Probably
- 5 Definitely

[Screen 19: Education level]

Q15. What is the highest level of education you have successfully completed (usually by obtaining a certificate or diploma)?

Scripter: insert country-specific list, see Excel "D4 Education" + recode into ISCED 1/2/3

99. Don't know/no answer

[Screen 20: Financial situation]

Q16. Thinking about your household's financial situation, how easy or difficult is it to make ends meet?

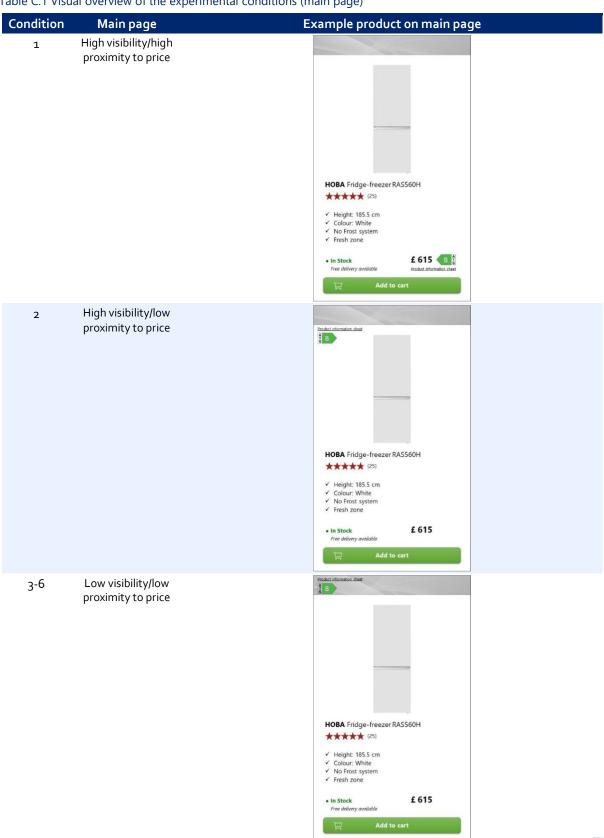
- 1 Very difficult
- 2 Fairly difficult
- 3 Neither easy nor difficult
- 4 Fairly easy
- 5 Very easy
- 6 Don't know





C Example images (mobile version of survey)

Table C.1 Visual overview of the experimental conditions (main page)





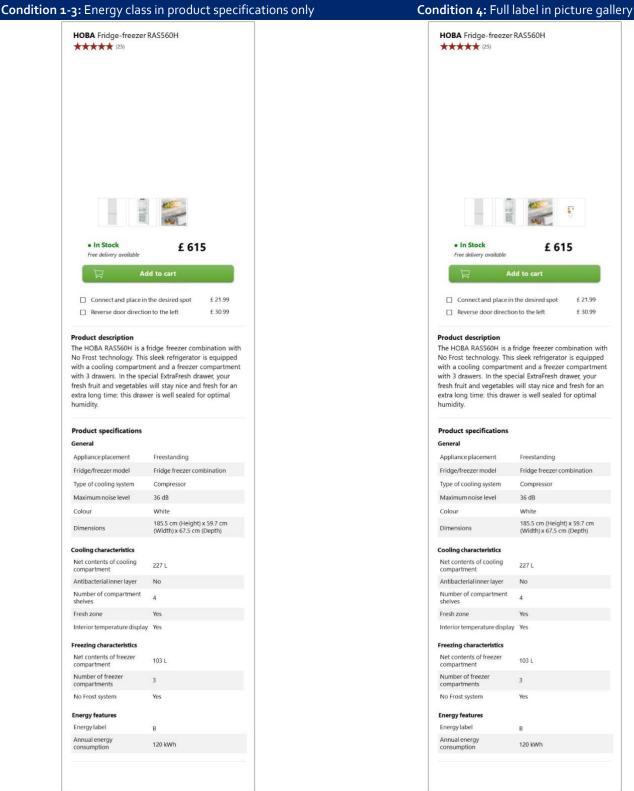






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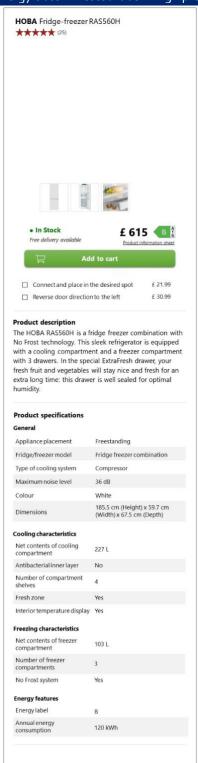
Table C.2. Overview of the experimental conditions (product pages)







Condition 5: Energy class in nested label – high proximity to price Condition 6: Energy class in nested label – low proximity to price



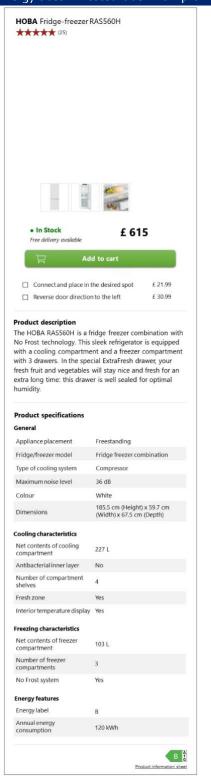






Figure C.1. The online shopping basket (mobile version is identical to desktop version)

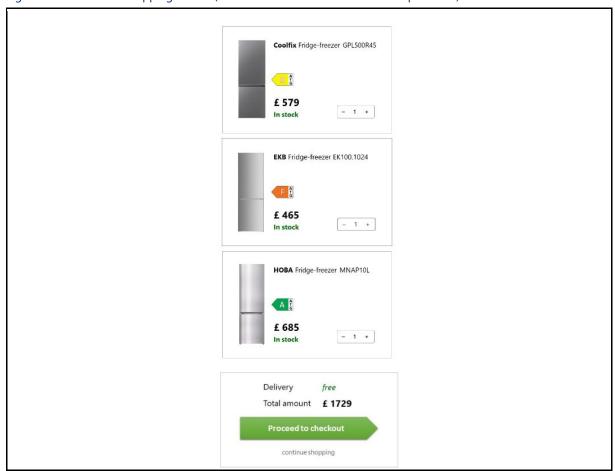
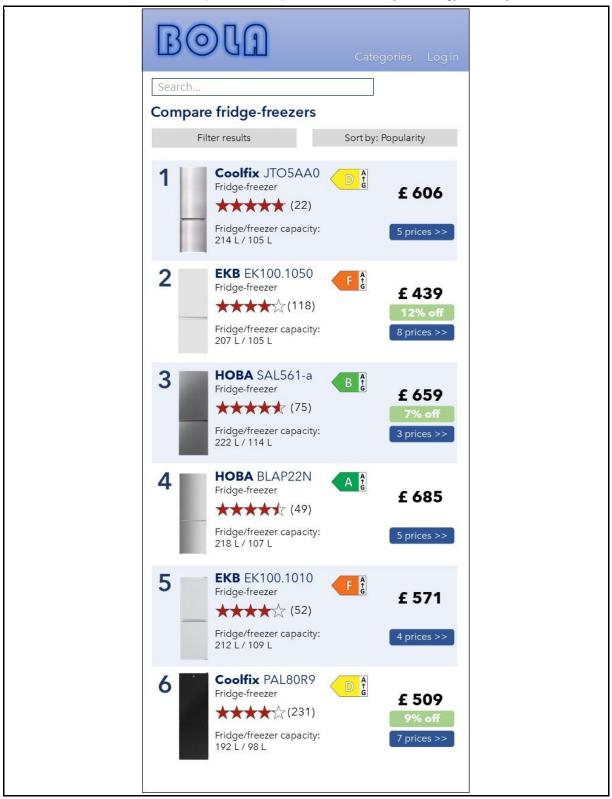






Figure C.2. The price comparison website. For half of the respondents, the products carried the energy efficiency arrow, and for the other half of the respondents, the products did not carry the energy efficiency arrow.







D Product set used in the experiment

Table D.1. Features of the products used in the experiment

Product feature	Product 1	Product 2	Product 3	Product 4	Product 5	Product 6
Name (fictional)	НОВА	НОВА	Coolfix	Coolfix	EKB	EKB
Model	MNAP10L	RAS ₅ 6oH	GPL500R45	JJo56AHoo	EK100.1024	EK100.2001
Reviews	4.6 (49)	4.8 (25)	4.7 (28)	4.7 (31)	4.8 (52)	4.8 (47)
Price (in Euro's)	779,	699 ,	659,	589 ,	529,	385,
Appliance placement	Freestanding	Freestanding	Freestanding	Freestanding	Freestanding	Freestanding
Fridge-freezer model	Fridge-freezer combination	Fridge-freezer combination	Fridge-freezer combination	Fridge-freezer combination	Fridge-freezer combination	Fridge-freezer combination
Type of cooling system	Compressor	Compressor	Compressor	Compressor	Compressor	Compressor
Maximum noise level	35 (class B)	36 (class C)	36 (class C)	35 (class B)	39 (class C)	39 (class C)
Color	Silver	White	Silver	Black	Silver	White
Dimensions	186 cm (Height) x 59.5 cm (Width) x 68.2 cm (Depth)	185.5 cm (Height) x 59.7 cm (Width) x 67.5 cm (Depth)	186 cm (Height) x 59.5 cm (Width) x 68.2 cm (Depth)	185.3 cm (Height) x 59.5 cm (Width) x 65.8 cm (Depth)	186 cm (Height) x 59.5 cm (Width) x 58.9 cm (Depth)	180 cm (Height) x 55 cm (Width) x 55.8 cm (Depth)
Net contents of cooling compartment	234	227	234	222	224	198
Antibacterial inner layer	No	No	Yes	Yes	Yes	No
Number of compartment shelves	4	4	4	4	4	4
Fresh zone	Yes	Yes	Yes	Yes	No	No
Interior temperature display	Yes	Yes	Yes	Yes	No	No
Net content of freezer compartment	107	103	107	119	120	71
Number of freezer compartments	3	3	3	3	3	3
No Frost system	Yes	Yes	Yes	Yes	Yes	No
Total volume	341	330	341	341	344	269
Efficiency class	Α	В	D	D	F	F
Guarantee	24 months	24 months	24 months	24 months	24 months	12 months
EEI	37	48	66	80	118	125
kWh/annum	98	120	168	204	304	263





Table D.2. Short product description (displayed on individual product page)

Product	Product description
Product 1	Keep your food fresh for longer with our spacious HOBA MNAP10L. The door cooling and air circulation keep the temperature in this fridge balanced and even on every shelf. The MNAP10L has two fresh zones to store fruit, vegetables, meat and fish for longer. NoFrost technology prevents condensation in the refrigerator and ice formation in the freezer.
Product 2	The HOBA RAS560H is a fridge freezer combination with NoFrost technology. This sleek refrigerator is equipped with a cooling compartment and a freezer compartment with 3 drawers. In the special ExtraFresh drawer, your fresh fruit and vegetables will stay nice and fresh for an extra long time: this drawer is well sealed for optimal humidity.
Product 3	This freestanding Coolfix GPL500R45 fridge freezer is frost free, meaning no more manual defrosting! Boasting an impressive capacity of 341 litres, this appliance offers plenty of room for everyone's favourites. It comes with reversible doors that can be adjusted to open from either the left or right, so you'll have no problem fitting it in.
Product 4	Coolfix JJo56AHoo is the perfect ally to get a healthy and safe preservation of your food. Equipped with No Frost technology, it prevents any ice formation inside the fridge to guarantee the best cooling performance. With a 35dB noise level, you can place this model in both a closed kitchen and open space.
Product 5	It's easy to stay organised with the EKB EK100.1024 fridge freezer. With a capacity of 344 litres, there is plenty of space to store your fresh and frozen foods. NoFrost technology reduces the humidity inside the freezer to prevent ice layers from forming. LED lighting makes the inside clear and bright, so you'll never miss a thing.
Product 6	From fruity yoghurts to savoury favourites, this EKB EK100.2001 fridge freezer is sure to keep everything in great condition and well organised. To suit your specific kitchen layout, it has reversible doors as well as internal LED lighting for greater visibility inside. It'll need manually defrosting every so often, just to keep it in tip-top condition.