

Making environmental claims: a literature review

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Introduction

1. This literature review is part of the Competition and Markets Authority's (CMA) misleading environmental claims consumer protection project. This project looks at how environmental claims are made, whether they are supported by evidence and how they influence the behaviour of consumers.
2. The aim of this literature review is to explore consumer preferences for environmentally friendly products and consumer understanding of environmental claims, as well as the impact of these types of claims. Some questions that this literature review seeks to consider are:¹
 - (a) how do consumers understand environmental messaging/environmental labelling?
 - (b) how does the (lack of) information play a role in consumer understanding of these types of claims?
 - (c) what causes the discrepancies between consumers' disclosed and revealed preferences?
 - (d) what is the effect of these environmental claims on consumers?
 - (e) what is the effect of greenwashing² on consumers?

Survey evidence

3. This literature review refers to many surveys, which are often conducted online. Details on sample size are included. It should be noted that when these samples are drawn from online panels, sample recruitment may not have relied on suitable randomisation methods. The consumers in these panels might spend more time on the internet and engage more actively when shopping around for deals. This should be taken into account when weighing the strength of the evidence from these papers. More information on this topic can be found in the CMA's survey good practice guide.³

¹ Some of these are questions for a court to consider in any particular case. This review does not seek to answer them for that purpose.

² Greenwashing can be defined as providing misleading impression on the environmental impact of a particular product.

³ "Good practice in the design and presentation of customer survey evidence in merger cases" by the CMA (2018), paragraph 2.29

Summary

4. The main findings of this literature review are:
- (a) there is a high presence of environmental claims – the overall average proportion of claims in each study ranges from about 40% to 80%. There are indications that the presence of environmental claims may be increasing.
 - (b) a large proportion of UK consumers (over 50%) take environmental considerations into account.
 - (c) UK consumers are increasingly interested in buying products which minimise harm to, or have a positive effect on, the environment.
 - (d) price and quality are the most important factors for consumers. Environmental impact and recycling are secondary factors, but some consumers are willing to pay more for goods that can be reused, recycled or are made from recycled materials.
 - (e) while environmental product labels have had a positive impact, sometimes consumers find it difficult to understand them. Transparent, easy to understand and third-party verified labels could be beneficial to consumers though this might also increase the cost of the product.
 - (f) barriers prevent consumers from using information properly, for example time constraints or accidentally coming up with the wrong conclusion on a label. Sometimes too much information can cause an information overload. This can lead consumers to disregard relevant information.
 - (g) consumers' stated preferences in buying products which minimise harm to, or have a positive effect on, the environment is higher than their actual behaviour. Greater awareness and understanding of the impact of buying such products may improve actual behaviour.
 - (h) more environmentally conscious consumers are generally more sceptical of environmental claims. There is some evidence that environmental claims can increase a consumer's willingness to pay for particular goods. Sometimes it is possible that an environmental claim can have a negative impact on the consumer's perception of the quality of a product.
 - (i) when not discovered, greenwashing can have a positive impact on consumers' impressions of a certain product/firm. When the greenwashing is discovered, it can have a negative impact on the reputation of the firm.

- (j) while this literature review includes some material about the impact of environmental claims on consumers, the papers are often very sector specific, making it difficult to generalise these results to a wider consumer impact. This is made more difficult as the impact of these types of claims appears to differ depending on the product attributes and circumstances.

Prevalence of claims

5. This section looks at the prevalence of environmental claims. The information is based on several surveys, such as those conducted by the European Commission (EC), Department for Environment, Food and Rural Affairs (DEFRA) and Mintel. We acknowledge that some of these studies were conducted some years ago and, thus, may not fully represent the current situation.
6. In 2014, the EC carried out a market study on environmental claims⁴ for non-food products.⁵
7. The study looked at a variety of non-food markets and services such as consumer electronics, household appliances, textiles, personal hygiene, transport and tourism.⁶
8. The study collected information through a number of channels, namely: a literature review, mystery shopping, consumer survey, desk research and stake holder engagement.⁷
9. The study found a high presence of claims, 70% of the products examined had an explicit environmental claim (either a text or a logo). When including implicit claims (form of environmental image or colours) this rises to 76% of products.⁸ See the table below for the figures by product group.

⁴ In this literature review, we use the terms and definitions as set out in the various studies.

⁵ [EC Consumer market study on Environmental claims for non-food products](#), July 2014

⁶ Page 40

⁷ Page 37

⁸ Page 17, it should be noted that some of the explicit claims are mandatory (e.g. information requirements on environmental performance / energy efficiency of a product)

Table 1: Presence of voluntary environmental claims by product group in the EU, 2014

<i>Presence of</i>	<i>Environmental claims (explicit and or implicit)</i>	<i>Explicit claims</i>	<i>Implicit claims</i>
Consumer electronics			
Mobile phones	10%	5%	10%
Laptops	17%	17%	17%
Light bulbs/lamps	69%	69%	7%
Televisions	9%	6%	3%
Household appliances			
Washing machines	46%	23%	33%
Refrigerators	30%	29%	16%
Microwave ovens	43%	43%	4%
Coffee machines	48%	48%	2%
Irons	70%	70%	7%
Textiles			
Clothing	27%	23%	15%
Footwear	36%	25%	20%
Carpet	63%	63%	14%
Household cleaning and storing products			
All-purpose cleaners	90%	75%	54%
Washing machine detergents	97%	85%	91%
Rubbish bags	85%	59%	82%
Personal hygiene, beauty and baby products			
Shampoos	68%	49%	67%
Skin creams	67%	57%	36%
Baby bottles	92%	85%	83%
Baby diapers	100%	100%	80%
Toilet paper	100%	91%	100%
Others			
Paints	75%	59%	71%
Showerheads	51%	33%	40%
Passenger vehicles*	98%	69%	91%
Airlines*	100%	55%	100%
Hotels*	80%	10%	80%
Household electricity services*	84%	52%	73%

Source: [EC Consumer market study on Environmental claims for non-food products](#), July 2014, page 54. Figures collected in mystery shopping exercise which was conducted in 7 countries. The countries were chosen to cover Europe geographically as well as for to provide a mixture of differences between them, including political and legal ones. The countries included France, Germany, the UK, Poland, Czech Republic, Denmark and Italy (p. 41).

* Implies that assessment was executed online instead of offline

10. In 2010, DEFRA conducted research into green claims on food and non-food product packaging.⁹

⁹ [Assessment of Green Claims on Products](#), June 2010

- (a) the research found that almost 2 out of 3 consumer products had at least one environmental claim. This number drops to less than a 1 in 2 if advisory claims¹⁰ are excluded. Almost half of all the claims were about recycling with almost all of those relating to product packaging (97%). The research also found that the average number of claims per item was 2.2 and that every sector had at least one item with a claim.¹¹
- (b) the research noted that a UK consumer would be very likely to see a wide variety of environmental claims on a typical shopping trip, such as marks related to recyclability or the product's packaging.¹²
11. Mintel's¹³ 2020 report on the 'Green Body and Personal Care' (BPC) market in the UK finds a rise in the number of specialist eco-friendly brands, alongside increased new product development (NPD) amongst brands that were traditionally not focused on sustainability, resulting in more competition in the green BPC market.¹⁴ The report also notes that in 2019, 46% of all BPC products launched in the UK carried ethical and environmental claims, up from 27% in 2015.¹⁵
12. Mintel's 2019 report¹⁶ focuses on the effect of environmental considerations on the usage and purchase of household care products. It finds that 63% of new product launches in the household care category carried ethical and environmental claims in 2018. The most popular products for environmental claims are fabric care (87% of category NPD in 2018) and paper products (82% of category NPD in 2018) – influenced by AISE¹⁷ and FSC¹⁸ accreditations.¹⁹
13. Based on the literature discussed above, while the prevalence of environmental claims may differ between sectors and across studies, the share of products carrying an environmental claim is high. The overall average proportion of claims in each study discussed above ranges from circa 40% to 80%. There is evidence that at least in the BPC space the prevalence of green claims is increasing.

¹⁰ By "advisory" or "instructional" we mean claims such as "please recycle", "recyclable", or instructions or symbols relating to disposal (such as the Mobius loop) (page 2).

¹¹ Page 4

¹² Page 5

¹³ "[The Green BPC Consumer UK](#)" by Mintel (2020)

¹⁴ Page 18-19

¹⁵ Page 18

¹⁶ "[The Green Household Care Consumer](#)" by Mintel (May 2019)

¹⁷ International Association for Soaps, Detergents and Maintenance Products

¹⁸ Forest Stewardship Council

¹⁹ Page 15

Consumer attitudes towards sustainability

14. In this section we look at consumer attitudes towards environmental claims and sustainability in general. We also look at the barriers that prevent them from choosing more sustainable products. We do this by exploring various surveys.
15. The 2014 EC market study presents the findings from Eurobarometer Survey (2011) based on face-to-face interviews at home from circa 26.8k respondents.²⁰ According to this survey, the vast majority of Europeans considered environmental change to be an important issue and were willing to pay more for environmentally friendly goods. However, the confidence in environmental claims was in decline among consumers. The EC notes that, in order for consumers to make sustainable choices, they need to be provided with clear and reliable information on the products that they purchase.²¹
16. The 2014 EC market study also conducted a survey²² that partly looked at consumer attitudes. Some relevant findings were:
 - (a) overall, 66% of consumers indicated that they took environmental considerations into account in daily life. For consumers in the UK this was 53%.²³
 - (b) consumers were given a list of product/services and were asked to rate, on a scale from 0 to 100, the importance of environmental friendliness of the product/service. For UK consumers, environmental friendliness was most important for the following products and services: a washing machine (58 for the UK compared to 65 for the EU), a light bulb/lamp (57 for the UK compared to 63 for the EU), a car (56 for the UK compared to 61 for the EU), electricity (52 for the UK compared to 58 for the EU).²⁴ The EC notes that the degree of importance attributed to different products/services can be linked to the presence of marketing

²⁰ The EC's conclusions are based on Eurobarometer Survey
http://ec.europa.eu/environment/pdf/ebs_365_en.pdf (2011), page 5

²¹ Page 15

²² Figures based on an online consumer survey and a behavioural experiment conducted in the following countries: Croatia, Denmark, Italy, Spain, France, Germany, the Netherlands, UK, Czech Republic, Poland and Norway (page 74). No respondents from Croatia took part in the online survey. Each country had a target sample of 500 respondents. Results were later weighed by respective population sizes. The total sample size was 5281, with 527 from the UK (Appendix 3, page 10)

²³ Page 75

²⁴ Other products were: a cleaning detergent (49 for the UK compared to 59 for the EU), toilet paper (48 for the UK compared to 52 for the EU), paint (45 for the UK compared to 56 for the EU), a bottle of shampoo (42 for the UK compared to 51 for the EU), an airline trip (39 for the UK compared to 28 for the EU), a t-shirt (33 for the UK compared to 40 for the EU), a stay in a hotel (33 for the UK compared to 36 for the EU).

communications for products and services in relation to their environmental impact.²⁵

- (c) a third of consumers thought they could not afford environmentally friendly products. This was 38% for UK consumers.²⁶
- (d) the EC found that when confronted with a choice between a washing machine carrying environmental claims and a washing machine which is cheaper by over a third and has no claims, 41% of consumers chose the cheapest option.²⁷ This was 57% for UK consumers.²⁸
- (e) the EC also found that when confronted with a choice between a cheaper shampoo and 2.8% more expensive shampoo carrying environmental claims, 27% of consumers chose the cheapest option.²⁹ This was 39% for UK consumers.³⁰

17. Another EC report found that 80% of EU citizens are interested in buying environmentally friendly products at least occasionally.³¹

18. An online survey by Accenture³² in 2019 surveyed 6,000 consumers in 11 countries (including the UK). Some of its findings around attitudes to sustainability were:

- (a) 72% of consumers buy more environmentally friendly products now than five years ago, 81% plan to buy more over the next five years.

²⁵ Pages 91-92

²⁶ Page 75

²⁷ The consumers were asked to imagine that they are buying a washing machine and asked which one of the options they would choose given the specifications and cost indicated. The cheapest washing machine is sold at €799 and is marked as being of A+ energy class and with an annual energy consumption of 199kwh. The more expensive washing machine is sold at €1099 and is marked as being A++ energy class, Ecolabel, with 'automatic energy & water saving' and with an annual energy consumption of 160kwh.

²⁸ Pages 93-94

²⁹ The consumers were asked to imagine that they are buying a shampoo and asked which one of the options they would choose given the specifications and cost indicated. The cheapest shampoo is sold at €5.68. The more expensive shampoo is sold at €5.84 and is marked as Ecolabel, Green Dot, 'flower', 'natural shampoo'.

³⁰ Page 95

³¹ [Sustainability Products in a Circular Economy – Towards an EU Product Policy Framework contributing to the Circular Economy](#) European Commission (2019), page 45

³² [Accenture April 2019 survey summary](#)

- (b) when making a purchasing decision, quality³³ and price³⁴ are still the most important factors, though consumers also consider factors such as environmental impact³⁵ and recyclability³⁶ as secondary.
 - (c) 42% of respondents have stopped buying products due to environmental concerns, with the biggest industry for this being food and beverage.
 - (d) 50% of consumers indicated that they would be willing to pay more for a product that was designed to be reused or recycled; 36% were willing to pay more for a product that was made from recycled materials.
 - (e) 72% of respondents have low confidence in chemical manufacturer's communications concerning environmental impact of their products and services.
19. Research conducted by the Institute of Customer Service in 2020 surveyed 2,000 consumers online in the UK.³⁷ The key findings with regards to consumers' views are as follows:
- (a) 60% of consumers feel that they should do more to help the environment.³⁸
 - (b) 18% of consumers name environment as the most important factor in their purchasing decisions while 50% of them believe that the environment is important to their purchasing choices but not more than other factors such as price, quality, availability or standards of service.³⁹
 - (c) 20% of consumers have deliberately chosen an environmentally sustainable product or service in the last year and 12% have stopped buying a product or service because of its adverse environmental impact.⁴⁰
 - (d) 11% of consumers say that there has been an occasion in the last year when they have wanted to buy an environmentally sustainable product or service but have not done so mostly due to the product or service being

³³ Quality was the most important factor for 35% of respondents and was within the top five reasons for 89% of respondents

³⁴ Price was the most important factor for 30% of respondents and was within the top five reasons for 84% of respondents

³⁵ Environmental impact was the most important factor for 4% of respondents and was within the top five reasons for 37% of respondents

³⁶ Recyclability / reuse potential was the most important factor for 2% of respondents and was within the top five reasons for 25% of respondents

³⁷ [Green Goes Mainstream? Customer service and the green agenda](#) * Institute of Customer Service (2020)

³⁸ Page 11

³⁹ Page 8

⁴⁰ Page 8

too expensive (other issues related to product/service reliability and quality).⁴¹

- (e) 34% of consumers say they would either, definitely (9%) or probably (25%) pay more (an average premium of 5.5%) for environmentally sustainable products and services.⁴²
- (f) consumers are more likely to make choices influenced by environmental impact in Utilities, Health and Beauty, and Retail sectors.⁴³
- (g) more than half of consumers said that in the next 5 years, environmental sustainability will either remain (18%) or become (37%) one of their highest priorities when making purchasing decisions.⁴⁴

20. Mintel's 2020 BPC report discusses consumer attitudes in the UK. The report is based on the data from 2,000 UK internet users. The findings of the report are as follows:

- (a) the report flags a rise of reported purchases of green BPC products, mostly driven by younger generations and women. It flags that price is the main deterrent discouraging consumers from buying eco-friendly BPC products. The concerns are not equal across demographics, with higher income households increasing their eco-friendly BPC purchases the most.⁴⁵
- (b) in the year prior to the report coming out, 89% of respondents bought regular BPC products, whilst 54% bought eco-friendly BPC products. Green penetration is highest amongst skincare buyers.⁴⁶
- (c) eco-friendly packaging is a priority for green BPC brands in the eyes of a consumer (with 59% of respondents noting it). Other important factors include eco-friendly ingredients (52%), low carbon emissions (32%), a traceable supply chain (31%) and low water usage (19%).⁴⁷

21. Mintel's 2019 report on household care products in the UK is based on the data from an online panel of 2,000 UK internet users. The report finds that:

⁴¹ The most noted products were electric vehicles, food and energy (page 26).

⁴² Page 27

⁴³ Page 8

⁴⁴ Page 8

⁴⁵ Pages 81-84

⁴⁶ Page 10

⁴⁷ Page 9

- (a) 45% of UK adults bought an eco-friendly household care product last year.⁴⁸
 - (b) the young, the urban and parents are most engaged with eco-friendly household care products. Under-45s are more likely to have bought eco-friendly household care products last year.⁴⁹
 - (c) affordability is the most cited ideal attribute of the ideal eco-friendly household care product amongst household care consumers (62%), followed by effective at cleaning (62%) and easy to recycle (57%).⁵⁰
 - (d) 43% of household care consumers would pay more for eco-friendly products from a brand they already buy from.⁵¹
22. ING carried out a survey on sustainability in 2019⁵² which looked at the attitudes of consumers on sustainability in the fashion, food and electronics sectors. The report finds that consumers are becoming more influenced by environmental concerns, with 61% of consumers being less willing to buy a product if they discovered a company was not taking their environmental responsibilities seriously.
23. The report also flags some barriers standing in the way of consumers engaging with more sustainable models such as lack of awareness and education, perceived effort in being more sustainable and cost.
24. Not every consumer has the same view on sustainability though – the report distinguishes between three groups, namely the non-engagers, circular sympathisers and circular champions.
- (a) non-engagers are defined as not factoring sustainability into their buying decisions, not willing to pay higher prices for sustainable products and being sceptical about individual responsibility.
 - (b) circular sympathisers care about sustainability, are prepared to pay more to support change but are not willing to inconvenience themselves (eg 72% said that they will not take part in recycling and repair of products if it means more effort on their part).

⁴⁸ Page 15

⁴⁹ Page 9

⁵⁰ Page 15

⁵¹ Page 15

⁵² “[Learning from consumers: How shifting demands are shaping companies’ circular economy transition. A circular economy survey](#)” by ING, Total sample size of 15,000, including 1,000 consumers in the UK.

- (c) circular champions view sustainability as critical, are prepared to pay more to support change and are willing to go an extra mile for sustainability (eg 82% said that they will recycle and repair products even if it means more time and effort on their part).⁵³
25. Ombudsman Services surveyed more than 10,000 consumers online for its 2020 Consumer Action Monitor report.⁵⁴ The survey was conducted by Deltapoll. The report found that:
- (a) for at least 50% of consumers in all social groups, providers' green credentials were important.
 - (b) energy or telecoms providers' green credentials were most important to the youngest and oldest in society. 66% of both 17 to 24 year-olds and over-65s said that green credentials were important.
 - (c) green credentials mattered more to women than to men. 64% of women said that green credentials were important compared to 58% of men.
 - (d) consumers felt more strongly about green credentials for energy providers than for telecoms. 65% of consumers felt their energy provider's green credentials were important, compared to 56% for telecoms providers.
 - (e) 44% of consumers said energy and telecoms providers must start to take the environmental protection agenda more seriously in the post-pandemic world.
26. Based on the studies above, more than half of UK consumers take environmental considerations into account. They are increasingly interested in buying environmentally friendly products. When choosing a product, price and quality are the most important factors for consumers. Environmental impact and recycling are secondary factors. A significant share of consumers is willing to pay more for goods that can be reused, recycled or made from recycled materials.

The understanding of product labelling

27. In this section we consider the role product labelling plays for consumers in sustainability and green messaging. We do this by looking at current consumer understanding of the various labels to see where the gaps in this area may be.

⁵³ Page 11

⁵⁴ [CAM Report 2020 by Ombudsman-Services](#)

28. The EC market study mentioned above examined 50 environmental claims in non-food products⁵⁵ to determine whether consumers are provided with clear, accurate and reliable information. Among other conclusions, the study found that environmental claims are often too general and vague and that the scientific evidence underlying them can be difficult to assess.⁵⁶
29. The EC market study survey also looked at consumer understanding of various environmental and ethical labels. Some of the relevant findings are:
- (a) on average UK respondents were more aware⁵⁷ of certain terms used in environmental claims compared to the weighted average of all countries,⁵⁸ these terms include:
- i) recyclable (92% UK versus 80% average);
 - ii) organic (89% UK versus 77% average);
 - iii) bio-degradable (83% UK versus 77% average);
 - iv) environmentally friendly (82% UK versus 69% average);
 - v) sustainable (67% UK versus 60% average);
 - vi) carbon-neutral (49% UK versus 35% average).
- (b) UK consumers were also often more aware⁵⁹ of various environmental claims in the form of logos, compared to the weighted average of all countries⁶⁰:
- i) Mobius Loop (91% UK versus 87% average);
 - ii) Green Dot (59% UK versus 75% average);
 - iii) Fairtrade (94% UK versus 50% average);
 - iv) FSC (62% UK versus 41% average);
 - v) EU Ecolabel (26% UK versus 36% average).

⁵⁵ These claims were analysed against the Unfair Commercial Practices Directive (UCPD) and the UCPD Guidance document.

⁵⁶ Page 28

⁵⁷ To measure awareness, the respondents were asked a question: 'Have you ever seen the following labels or terms?'

⁵⁸ Page 77

⁵⁹ To measure awareness, the respondents were asked a question: 'Have you ever seen the following labels or terms?'

⁶⁰ Page 77

(c) a majority of consumers find it difficult to understand which products are truly environmentally friendly. The EU market study suggests that control mechanisms to ensure claims are genuine are likely to have a positive impact on consumer trust.⁶¹

30. The EC market study also suggests that consumers need to be educated on the meaning of various environmental logos/labels in order to improve their awareness of their impact on the environment.⁶² The report tests consumer understanding of certain logos by having them choose from a list of possible options.⁶³ The results are as follows:

(a) for the EU Ecolabel, the three correct options were 'It is among the most environmentally friendly products in its category', 'Ensures that products have high quality and a long service life' and 'It is a voluntary label'. They were indicated by 48%, 18% and 24% of UK respondents respectively, compared to 49%, 19% and 18% on average for all countries. However, the three quite distinct incorrect options ('The product is made in the European Union (EU)', 'Only used on electronic products' and 'None of these') were chosen relatively often. They were indicated by 34%, 13% and 5% of UK respondents respectively, compared to 43%, 13% and 6% on average for all countries.⁶⁴ Of those who had seen the logo before, 70% had a partial understanding and 30% had no understanding at all.⁶⁵



(b) for the Green Dot, the two correct options were 'Manufacturer contributes to the cost of recovery and recycling' and 'Companies comply to the requirements under European Packaging Waste Directive'. They were indicated by 16% and 18% of UK respondents respectively, compared to 25% and 23% on average for all countries. However, all but one of the three incorrect options ('The packaging is recyclable', 'The product is recyclable' and 'None of these') were chosen significantly more often.

⁶¹ Page 96

⁶² Page 96

⁶³ Page 79

⁶⁴ The correct answers are: 'The product that bears it is amongst the most environmentally friendly in its category', 'it ensures that products carrying the label have high quality and long service life and 'it's a voluntary label'.

⁶⁵ Page 79

They were indicated by 49%, 39% and 7% of UK respondents respectively, compared to 54%, 36% and 5% on average for all countries. Only 25% of all consumers knew that it meant that the manufacturer of the product contributes to cost of recovery and recycling (16% UK).⁶⁶



- (c) for the Mobius Loop, the two correct options were ‘The packaging is recyclable’ and ‘Everyone can introduce this label on its packaging whenever they feel like it’. They were indicated by 58% and 7% of UK respondents respectively, compared to 53% and 8% on average for all countries. However, the three incorrect options (‘The product is recyclable’, ‘Manufacturer contributes to the cost of recovery and recycling’ and ‘None of these’) were chosen relatively often. They were indicated by 50%, 13% and 3% of UK respondents respectively, compared to 43%, 23% and 6% on average for all countries.⁶⁷



31. The effectiveness and potentially future changes to the EU ecolabel are discussed in a different EC report⁶⁸ on the EU policy framework around sustainability. The report refers to a public consultation⁶⁹ around the ecolabel and finds that:
- (a) 86% of respondents identified a lack of knowledge and understanding of the EU Ecolabel by consumers as a main challenge to its effectiveness.⁷⁰

⁶⁶ Page 80

⁶⁷ Page 81

⁶⁸ “Sustainability Products in a Circular Economy – Towards an EU Product Policy Framework contributing to the Circular Economy” European Commission (2019)

⁶⁹ There were 642 total responses to the open public consultation from different types of stakeholders that included citizens (429), industry (141), civil organisations (34), public authorities (14), academic institutions (14), and ‘other types’ of organisations (7). Page 64

⁷⁰ Page 11

- (b) 80% noted that there were too many labels on the market.⁷¹
- (c) there are more than 465 environmental labels worldwide, up from 430 in 2013. In the EU there are more than 100 labels active.⁷²
32. Grunert et al (2013)⁷³ is an example of a bigger online survey, using 4408⁷⁴ respondents in the UK, France, Germany, Spain, Sweden and Poland. It explores the consumer understanding and use of various sustainability (environmental/ethical) labels on food products.
33. The survey found that many respondents did not understand the various labels on products. Out of all countries, the understanding was the highest in the UK.⁷⁵ It further found that while there were levels of general concern, this did not always translate through into actual purchases of sustainable products. This can be due to a lack of understanding of the various labels.⁷⁶
34. Mintel's 2019 report on household care products in the UK finds that 49% of household care product buyers are unsure about what brands mean by "eco-friendly".⁷⁷ The report also finds that 27% of adults who bought household care products last year believe that the ideal eco-friendly household care product should be certified by an ethical organisation, rising to 35% for those who have bought eco-friendly products during that time.⁷⁸
35. Department of Energy & Climate Change (DECC)⁷⁹ together with John Lewis and the Behavioural Insights Team (BIT) conducted a behavioural trial (2014)⁸⁰ which looked at how the information on energy labels on appliances can encourage better informed consumer decisions. The research recognised that EU energy labels only report energy use in kWh per year which is an abstract concept for some consumers. As a result, a randomised controlled trial was designed. It tested how the provision of electricity lifetime running

⁷¹ Page 11

⁷² Page 45

⁷³ "[Sustainability labels on food products: Consumer motivation, understand and use](#)" by K. Grunert, S. Hieke and J. Wills (2013)

⁷⁴ Of these, 602 were in the UK

⁷⁵ In the models, the respondent being from the UK had a positive impact on predicted understanding of the labels, this was compared against the base of Sweden, with all other countries having a negative impact on the determinant.

⁷⁶ Page 187

⁷⁷ Page 15

⁷⁸ Page 15

⁷⁹ DECC became part of Department for Business, Energy & Industrial Strategy in July 2016

⁸⁰ [Evaluation of the DECC/John Lewis energy labelling trial](#), by DECC, John Lewis and the Behavioural Insights Team (2014)

costs at the point of sale changed purchasing behaviour, by increasing the attractiveness of appliances with lower energy consumption.⁸¹

36. Having analysed the sales data, DECC and its partners found positive evidence for the use of lifetime running cost labels on washer dryers. However, there was no evidence that this kind of information had any impact on the sales of other white goods. DECC and its partners noted that small, low cost changes to address information barriers and provide salient information to consumers can help to reduce energy demand. It was also noted that by refining the approach or presenting information in a different way (e.g. through a more tailored way or better signposting), the salience of the information could be further increased.⁸²
37. Based on the studies discussed above, environmental product labels have had a positive impact on the consumer choice. However, consumers sometimes find it difficult to understand these labels or do not know what they actually mean. Transparent, easy to understand and third-party verified labels could be beneficial to consumers though this might also increase the cost of the product.

The impact of (the absence of) information

38. This section considers the role of (the absence of) information when consumers are trying to make a sustainable decision. It finds that there are certain barriers that exist for consumers in finding and using environmental information in their decision. It also looks at the risk of information overload before considering some field studies that explore better ways in which consumers can be informed.
39. Grunert (2011)⁸³ explores six barriers that may exist for consumers in using information to make sustainable choice. The paper notes that there are various labels on food products which can provide information on its sustainability. However, the six barriers might still cause a consumer not to choose a certain product. These barriers are:
 - (a) A consumer does not notice the label due to time-constraints/habitual purchases. The study notes that retail shopping often occurs in an

⁸¹ This has been done by allocating John Lewis stores into two groups: (i) intervention group stores provided total monetary lifetime running cost of each appliance on the appliance label (In addition to the EU energy label with kWh per year information); and (ii) control group stores provided no information on lifetime running costs on the appliance label (only the EU energy label with kWh per year information was provided)

⁸² Pages 6-7

⁸³ "[Sustainability in the Food Sector: A consumer Behaviour Perspective](#)" by K. Grunert (2011)

information overloaded environment, which might point to the consumer not perceiving the logo.

- (b) A consumer notices the label but does not take the effort to understand what it means. This might mean that the consumer forms a positive attitude towards the label and uses it in decision-making without understanding it. As discussed in the EC study, many consumers do not understand many of these labels.
 - (c) A consumer notices the label, makes an effort to understand it but ends up reaching the wrong conclusion about the label. The consumer might still buy the product, but for the wrong reasons. For example, a consumer might assume that an organic food label means that the food is healthier, which is not unequivocally true. This can also have a negative effect if consumers make stronger inferences about a label than are actually true. They may be disappointed after consuming the product, and as a result avoid the product and the eco-label in the future.
 - (d) The information of the label might be traded off against other criteria (higher price, lower quality).
 - (e) Consumers may find it generally difficult to carry out a sustainable choice in practice. This could be because consumers may think that their own choice would not have a big enough impact or they might simply find it difficult to distinguish between green and non-green products.
 - (f) While a consumer might have a positive attitude towards sustainability, it is possible that this is not strong enough to affect behaviour at the point of purchase, a consumer might 'forget' their attitude at the time.
40. In their response⁸⁴ to an EC consultation on the EC initiative on empowering consumers for the green transition, the Dutch Authority for Consumers and Markets briefly discusses the impact of information on consumer decision making.
41. The response notes that while transparency and information requirements are an important building block, they are not a complete solution, because too much information could lead to a reduced quality of consumers' decisions. It is therefore important that the information requirements are meaningful, consistent and presented in a way that empowers consumers.

⁸⁴ [Reaction of ACM to the consultation of the European Commission's legislative initiative 'Empowering consumers for the Green Transition'](#) (September 2020)

42. An OECD paper⁸⁵ further discusses the impact of information overload, flagging that governments should be wary of exacerbating this when setting mandatory information requirements for businesses.
43. Chen et al (2015)⁸⁶ explores the impact of information and labelling of fish products. This was done as an experiment in France,⁸⁷ looking at Norwegian fish. In the various treatments, participants were presented with eco-labelled and non-labelled fish and were either given negative information around fish farming and/or negative information around wild fish stocks. The experiment then looked at the effect of this information on the willingness to pay ('WTP') for different fish types. It found that when the fish was eco-labelled and no further negative information was provided, consumers had an increased WTP for cod ranging between 4% to 11%. Including negative environmental information (on farmed fish or harvesting wild species) reduced the WTP by a larger amount than the premiums of the ecolabels regardless of whether the fish was eco-labelled or not. The authors explain that ecolabels do not have the intended shielding effect when consumers receive additional negative environmental information. As a result, instead of being drawn to eco-labelled products, such consumers become more sceptical about both unlabelled and labelled products.
44. Rourke and Ringer (2016)⁸⁸ also explore the role of information on consumer decision making. They do this by studying the impact of the sustainability ratings that were available through GoodGuide (which gave many products a sustainability, health and social score) on consumer purchase intentions. GoodGuide also allows users to directly go on to another retailer's website to purchase the product. The study itself used data from 41,398 different products.
45. The study finds that the impact of the sustainability score on consumer purchase intentions differs by user type (whether they were directly looking for the score or stumbled on it) as well as product type. For some products, a higher sustainability score can be associated with a lower purchasing intent of the consumer (e.g. medicine cabinet products) even when health ratings of this product show a strong positive impact. The authors reason that such a result might be ascribed to the altruistic nature of environment scores compared with the more self-interested health scores. They also note a possible consumer bias against 'green' products (e.g. green products may be

⁸⁵ ["Improving online disclosures with behavioural insights"](#) OECD (April 2018)

⁸⁶ ["Consumer Preferences, Ecolabels, and Effects of Negative Environmental Information"](#) by X. Chen, F. Alfnes and K. Rickertsen (2015)

⁸⁷ The study had a total of 194 participants, of which 116 had taken part in previous experiments around fish.

⁸⁸ ["The Impact of Sustainability Information on Consumer Decision Making"](#) by D. O'Rourke and A. Ringer (2016)

viewed as being more expensive, of lower quality or consumers may perceive them as having limited impact on environment).⁸⁹

46. Vlaeminck et al (2014)⁹⁰ flags that the impact of environmental information might be lower as there are various different labels that make it difficult for consumers to understand them. The lack of transparency and factual information then turns consumers' purchasing decision into a costly search.
47. This paper explores how standardised information could overcome this problem. In particular, the authors explore whether consumer attitudes translate into more corresponding environmentally friendly behaviour when one of the barriers towards environmental food sustainability – low effectiveness of information provision – is removed. Vlaeminck et al conducted incentive compatible field experiment where they presented consumers with an environmental information card.⁹¹ The experiment set up various food stands within the entrance of a Belgian retail store. Consumers⁹² were informed that this was a research project and were asked to fill in a pre-questionnaire. Each product within the stall was given an environmental friendliness score out of 10, which summarised five impact categories⁹³ and allowed for quick comparison.
48. The study finds that the installation of the most effective environmental information card results in consumers switching towards more environmentally friendly food products. The overall environmental friendliness of consumers' food baskets is increased. As a result, the authors suggest that policy makers could enlarge the environmentally friendly consumer segment through the provision of easy-to-interpret and standardised environmental information.
49. Research by the Institute of Customer Service notes that transparency of information (together with price, quality and availability of products and services) is one of the key enablers of environmentally sustainable buying decisions. Independent websites, TV (or online news) and government websites are seen as the most reliable sources of information about the sustainability of organisations. According to the research, consumers would

⁸⁹ Page 8

⁹⁰ ["How can environmental information align consumer behaviour with attitude? Evidence from a field experiment"](#) by P. Vlaeminkc, T. Jian and L. Vranken (2014)

⁹¹ The most effective card was selected using an online-choice experiment. This card was used in the field experiment.

⁹² 150 participants, they were offered a monetary reward for participating

⁹³ These five categories include carbon emissions (weight of 42.1%), soil (weight of 24%), energy use (weight of 13.9%), water use (weight of 11.2%) and land use (weight of 8.8%).

like organisations to communicate both specific personal benefits as well as broader environmental benefits of products and services.⁹⁴

50. Mintel's 2020 BPC report notes that whilst price is the primary reason for not buying green BPC, a high proportion of consumers are either confused about which brands/products are eco-friendly (33%) or are sceptical about eco-friendly product claims (22% of adults think that eco-friendly beauty and grooming products' claims are not always trustworthy). According to Mintel, such findings highlight a need for consumer education.⁹⁵ The report further states that in the year prior to its publication, 29% of respondents have researched a beauty/grooming brand to find out if it is eco-friendly.⁹⁶
51. Barriers prevent consumers from using information properly, for example, time constraints or accidentally coming up with the wrong conclusion on a label. Sometimes too much information can cause an information overload. This can lead to consumers to disregard relevant information.

Discrepancies in stated and actual consumer behaviour

52. This section looks at the discrepancies between consumers stated intentions and actual behaviour and what could be causing the difference between these two.
53. An article in the Harvard Business Review⁹⁷ discusses the paradox with many consumers stating that they have a positive attitude towards eco-friendly products without actually purchasing them. The article flags one survey,⁹⁸ where 65% of respondents said that they wanted to buy brands that advocated sustainability but only 26% of respondents actually did this.
54. The article goes on to flag ways on how to align consumer behaviour with their stated preferences such as:
 - (a) using social influence (e.g. your neighbours are already doing it). This can be enhanced by making sustainable behaviours others adopt more evident to observers or having consumers make their own behaviour public (e.g. hanging a card on your hotel door to show that you are reusing towels).

⁹⁴ Page 8

⁹⁵ Page 12

⁹⁶ Page 18

⁹⁷ "The Elusive Green Consumer" by K. White, D. Hardisty and R. Habib (2019)

⁹⁸ The article does not indicate which survey this is.

- (b) making sustainable behaviour the default option to shape habits for consumers.
55. Vermeir and Verbeke (2006)⁹⁹ explores the gap between consumers' attitudes towards sustainability and the actual intention to purchase sustainable food. It does this through an in-classroom experiment and survey among 456 young consumers in Belgium.
 56. Among other results it finds that consumers who believe in their personal consumer effectiveness¹⁰⁰ are more positive towards sustainable products and have stronger intentions to purchase them than those who do not. The study finds that the value of sustainable products can be stimulated through raising consumer involvement (emphasising personal relevance and importance to the individual), better informing consumers about their potential effectiveness and product availability, raising consumer certainty that the product is sustainable¹⁰¹ and their social norms. Most of these factors, in turn, can be influenced through better communication and provision of information.¹⁰²
 57. Joshi and Rahman (2015)¹⁰³ explore 53 empirical articles looking at the attitude and behavioural inconsistencies around green purchasing to see what factors cause these.
 58. In the various studies there were individual and situational factors that impacted decision making around purchasing of green products. Some of the individual factors found were emotions, habits, perceived consumer effectiveness and behavioural control, values, trust and knowledge. Situational factors flagged were price, availability, quality, brand and labelling.
 59. Based on the studies discussed above, consumers' stated preferences for buying environmentally friendly products are higher than their revealed preferences manifested through their actual purchasing decisions. Higher perceived consumer effectiveness and consumer involvement are some of the factors that lead to increased revealed consumer preferences. These factors can be enhanced by providing better communication and information, bridging the gap between stated and actual preferences.

⁹⁹ "[Sustainable food consumption: Exploring the Consumer "Attitude – Behavioural Intention" gap](#)" by I. Vermeir and W. Verbeke (2006)

¹⁰⁰ The extent to which a consumer believes that his or her personal efforts can contribute to the solution of a problem

¹⁰¹ Certainty is associated with 'information and knowledge' in the article.

¹⁰² Page 188

¹⁰³ "[Factors Affecting Green Purchase Behaviour and Future Research Directions](#)" by Y. Joshi and Z. Rahman (2015)

Effects of environmental claims on consumers

60. This section explores the literature on the impact of environmental claims on consumers in general and how this might differ between certain consumer groups. It also considers some potential negative side-effects that environmental claims could have before considering how these types of claims could best be targeted.
61. The EC consumer conditions scoreboard (2019)¹⁰⁴ finds that more than half of EU consumers are influenced by environmental claims when making a purchase.¹⁰⁵ The scoreboard is based on the EC's report (2018) which provides more detailed breakdowns.¹⁰⁶ It finds that UK consumers (63.1%) show higher levels of trust in environmental claims compared to the EU-27¹⁰⁷ average (54.2%).¹⁰⁸ The report also finds higher levels of reported influence of environmental claims on purchasing decisions in the UK (67.7%) compared to the EU-27 average (55.2%).¹⁰⁹ These findings are based on a telephone survey of circa 28k EU consumers in 2018 and, thus, do not suffer from the known biases associated with online panels.
62. Finisterra and Reis (2012)¹¹⁰ through a questionnaire¹¹¹ tested how different types of individuals respond to green claims and found that the more environmentally concerned an individual is, the more sceptical he or she will be towards the green claims made.
63. Luchs et al (2010)¹¹² explores a potential negative side effect of environmental claims. It finds that for products where strength-related attributes are preferred (e.g. tyres), sustainability claims could lower the consumer preferences for the product versus where gentle attributes are preferred (e.g. baby shampoo) where there might then be a benefit.

¹⁰⁴ [The EC consumer conditions scoreboard](#) (2019)

¹⁰⁵ Page 2

¹⁰⁶ [Consumers' attitudes towards cross-border trade and consumer protection](#) (2018)

¹⁰⁷ EU-27 includes Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Germany, Denmark, Estonia, Greece, Spain, Finland, France, Hungary, Croatia, Ireland, Italy, Lithuania, Luxembourg, Latvia, Malta, Netherlands, Poland, Portugal, Romania, Sweden, Slovenia, and Slovakia.

¹⁰⁸ Page 66

¹⁰⁹ Page 69

¹¹⁰ ["Factors affecting Scepticism towards Green Advertising"](#) by M. Finisterra and R. Reis (2012)

¹¹¹ Questionnaire with a sample size of 301, filled in by students at a Portuguese university.

¹¹² ["The Sustainability Liability: Potential Negative Effects of Ethicality on Product Preference"](#) M. Luchs, R. Naylor, J. Irwin and R. Raghunathan (2010)

64. Nyilasy et al (2014)¹¹³ explores the impact of green advertising and a firm's corporate environmental performance on that firm's reputation and consumer purchase intention.
65. It does this through an experiment where participants¹¹⁴ were shown different types of ads for a fictitious firm which could either be a general ad or a green one. They were also exposed to the actual corporate environmental performance of that firm. After this the study measured purchase intent and attitude towards the brand.
66. The study finds that, as expected, the negative effect of a firm's low performance on brand attitude becomes stronger in the presence of green advertising. There is an unexpected second finding: when the firm's environmental performance is high, green advertising might still be unfavourable. The study links this to attribution theory, as consumers might be sceptical of the motives behind the advertising.
67. Krishnan (2011)¹¹⁵ explores the impact of environmental information on key consumer metrics. It does this by having consumers rate various products¹¹⁶ in a web survey. These results find that when the environmental impact information is presented clearly, it can make a significant difference in consumer evaluation of the product. It also flags that there would be an effect if non-green products were required to disclose harmful impacts.
68. Canavri and Coderoni (2020)¹¹⁷ look at the impact of carbon footprint labelling on consumer attitudes to purchasing milk in Italy. The paper also reviews the literature on the WTP impact of a lower carbon footprint. This review finds that for different products in different countries some consumers would have a higher WTP if there is a carbon footprint certification. The study also finds a higher WTP for lower carbon footprint milk in Italy.¹¹⁸ These studies found that the increased WTP on average ranged between 9% and 30%.

¹¹³ ["Perceived Greenwashing; The Interactive Effects of Green Advertising and Corporate Environmental Performance on Consumer Reactions"](#) by G. Nyilasy, H. Gangadharbatla and A. Paladino (2014)

¹¹⁴ N=302, experiment done on a US university

¹¹⁵ ["Consumer effects of environmental impact in product labelling"](#) by R. Krishnan (2011)

¹¹⁶ Products were selected across different categories, each product selected provided the opportunity to focus on an ingredient / process that had a potentially negative impact on the environment. The products ultimately chosen were: apples (impact of pesticides), Bar soap (formaldehyde as an ingredient could have a health impact, MP3 headphones (plastics) and printing paper (recycled versus non-recycled paper)

¹¹⁷ ["Consumer stated preferences for dairy products with carbon footprint labels in Italy"](#) by C. Canavari and S. Coderoni (2020)

¹¹⁸ Research done in two online studies, one with a sample of 215 and one with a sample of 178

How to present environmental claims

69. Kronrod et al (2012)¹¹⁹ look at the best way to pitch an environmental message to consumers through several laboratory and field experiments. It finds that when targeting general consumers (as opposed to the more environmentally conscious ones), it is better to use less assertive language when trying to have them make an environmentally conscious decision.
70. Pelozo et al (2013)¹²⁰ looks at the impact of self-accountability (consumer's desire to live up to their internally held self-standards) on consumer behaviour.¹²¹ It tests this through various studies and finds that when consumers' self-accountability is activated, they prefer products promoted on the basis of ethical attributes over self-benefits.
71. Moser (2015)¹²² explores what drives pro-environmental purchasing behaviour using a large dataset of German consumers. The study uses data from a German research institute's GfK's household panel which contains data on just over 12,000 German households. Data collected included purchasing behaviour and environmental topic information with several questions exploring environmental attitude, WTP for greener products and behavioural questions. The study found that WTP was the stronger predictor of green purchasing, followed by personal norms.¹²³
72. Research by the Institute of Customer Service proposes 7 key enablers that would help organisations to incorporate the green agenda effectively into their customer proposition.¹²⁴ One of them is 'integrated customer proposition' which is comprised of the following proposals to organisations: creating a compelling offer that integrates sustainability, price, quality, service; articulating clear benefits to the customer and the environment; demonstrating credible evidence of the organisation's commitment; being transparent and authentic; communicating coherently across channels and in customer and

¹¹⁹ "Go Green! Should environmental Messages be So Assertive?" by A. Kronrod et al (2012)

¹²⁰ "Good and Guilt-Free: The Role of Self-Accountability in Influencing Preferences for Products with Ethical Attributes" by J. Pelozo, K. White and J. Shang (2013)

¹²¹ The results of the research is based on 4 studies. Self-accountability of participants was tested through a number of questionnaires. Depending on the study, the self-accountability was manipulated for the treatment groups by introducing accountability-related words in the task (e.g. to form thematic categories from a larger list of words), making the participants fill in social accountability questionnaires in front of others and using name cards.

¹²² "Thinking green, buying green? Drivers of pro-environmental purchasing behaviour" by A. Moser (2015)

¹²³ Personal norms reflect ethical motives behind the purchasing decision and can be defined as moral obligation to behave in an altruistic or green manner.

¹²⁴ These enablers are: (i) Customer Insight; (ii) Strategy & objectives; (iii) Integrated customer proposition; (iv) Employee proposition; (v) Governance & ownership; (vi) Collaborative action; and (vii) Innovation and agility.

stakeholder engagement; measuring impact on customer buying behaviour, trust and reputation.¹²⁵

73. Based on the literature discussed above, many consumers have trust in and are affected by environmental claims when making purchasing decisions. However, more environmentally conscious consumers are generally more sceptical of environmental claims. There is also some evidence that environmental claims can increase a consumers' willingness to pay for particular goods. Sometimes it is possible for an environmental claim to have a negative impact on the consumer's perception of the quality of a product. The literature suggests a number of ways in which environmental claims could have a greater influence on consumers, including targeting general consumers (as opposed to environmentally conscious ones), using less assertive language, focusing on the ethical attributes of the products.

Effects of greenwashing on consumers

74. This section firstly looks at a number of reports that discuss examples of greenwashing. The section further considers the effect that greenwashing may have on consumers.
75. In 2011, ClientEarth, a non-profit environmental organisation, produced a report¹²⁶ examining the claims surrounding seafood sold in UK supermarkets. The report focused on supermarkets because they account for most of the fish sold in the UK, and analysed claims on sustainability¹²⁷ on 100 fish products¹²⁸ in 9 supermarkets.
76. Out of these 100 claims, 22 were considered to be misleading and a further 10 did not have the required information to verify the claim.
77. A 2020 report¹²⁹ by Good Energy flags issues around greenwashing in the UK electricity market. The report flags that many of the renewable power schemes are backed by certificates (REGOs)¹³⁰ and that a supplier can buy these certificates without buying the underlying energy, but instead combine these certificates with regular energy to make them look green. The report

¹²⁵ Pages 12-13

¹²⁶ [Environmental claims on supermarket seafood](#) by ClientEarth (January 2011)

¹²⁷ The study categorised different types of claims such as 'sustainably sourced', 'dolphin friendly', 'responsibly farmed', 'environmentally friendly farms', 'from well managed fisheries', 'responsibly sourced' and 'protects the marine environment'.

¹²⁸ Many of these were own brand products of the supermarkets, but it also included 11 additional seafood brands.

¹²⁹ [Renewable Energy Tariffs: The Problem of Greenwashing](#) by Good Energy (October 2020)

¹³⁰ Renewable Energy Guarantee of Origin

says that the supply of these is bigger than the demand for them, allowing suppliers to easily greenwash their energy supply.

78. De Jong et al (2018)¹³¹ compare the impact of detected greenwashing versus other options such as a firm being vocally green, those that are silently green or are not green. It did this through an experiment¹³² where consumers were shown advertisements on detergent and perfume, alongside company websites and third-party reports on sustainability.
79. The study found that participants recognise when firms use more environmental claims in their advertising compared to the firms that are more silent about it.
80. The study also found that detected greenwashing has the potential to positively affect a consumer's impressions of an organisation's environmental performance compared to the organisations that do not engage in environmentally friendly performance and do not make green claims. However, the effect of environmental claims by greenwashing organisations on consumer impressions (when such greenwashing was detected) was not as large compared to organisations that sincerely engaged in environmentally friendly performance (irrespective of whether they made any environmental claims about it). In addition, it appears that even when consumers know the green information is not entirely true, an organisation that explicitly communicates an interest about the environment can create a more favourable image for itself compared to the one that does not engage in environmentally friendly performance and does not make green claims. Nevertheless, the effect of such detected greenwashing seems to be short-term and does not seem to result in consumers' increased purchase interests.
81. The study also looked at how greenwashing affected consumers' perception of the communicative integrity of the company and found the effect to be negative.
82. The authors conclude that since the detected greenwashing overall does not seem to contribute to consumers' buying interests, it is a 'useless, myopic strategy'.
83. De Jong et al (2020)¹³³ explore the impact of different types of greenwashing through an experiment. The study distinguishes between different types in the

¹³¹ ["Making Green Stuff? Effects of Corporate Greenwashing on Consumers"](#) by M. De Jong, K. Harking and S. Barth (2018)

¹³² Online questionnaire, a total of 250 respondents used in the actual results.

¹³³ ["Different Shades of Greenwashing: Consumer's Reactions to Environmental Lies, Half-Lies, and Organizations Taking Credit for Following Legal Obligations"](#) by M. de Jong, G. Huluba and A. Beldad (2020)

following way. In relation to behaviour/claim of the firm this can be true, a half-lie, or a full lie. In relation to motive, it is possible that the organisation acted in an environmentally positive way on their own behalf, or it can be the case that they are simply 'taking credit' for complying with existing legal obligations.

84. It tests the impact of these different gradations and types of greenwashing in an experiment that looks at the impact of these practices on corporate reputation. Participants rate a company's performance first after reading its own statement and then a third-party report on the same firm. The case study used here is a fictional cruise company, inspired by an actual case of greenwashing. Data was collected through an online questionnaire.¹³⁴
85. The study found that behavioural greenwashing (the claim being a half lie or full lie) had a significant negative effect on the perceived reputation of the firm. Motive greenwashing had no significant effect, meaning that it generally did not matter whether the green initiatives were self-initiated or merely reflected compliance with legal obligations.
86. Chen and Chang (2013)¹³⁵ use data from a survey¹³⁶ held in Taiwan about the purchase of electronics. It asked respondents to recall a purchase of an electronic product and then tested how they thought about the product in relation to environmental performance. It shows that greenwashing can negatively impact the trust in green products directly, but also indirectly through creating more confusion and by increasing the potential 'green risk' a consumer feels when deciding to purchase a product.
87. Based on the above, studies show that greenwashing can have a positive effect on a consumer's impression of a firm's performance if not discovered. However, once uncovered green washing can have a negative impact on the reputation of the firm or even reduce the trust in green products in general.

¹³⁴ With a final total sample size of 191, of which 28 got excluded because they filled it in too quickly or took too long and a further 3 because their education level deviated too much from the overall sample.

¹³⁵ "Greenwash and Green Trust: The Mediation Effects of Green Consumer Confusion and Green Perceived Risk" by Y. Chen and C. Chang (2013)

¹³⁶ Sample size of 252 questionnaires

Annex A: The relationship between packaging, and recycling and waste

88. This section looks at the link between packaging and how it plays a role in the recycling behaviour of consumers. These papers consider how certain attributes of the packaging or product might hinder recycling and provide some insight into what manufacturers can do to increase recycling rates.
89. Nemat et al (2019)¹³⁷ reviews a wide body of literature in relation to this connection, some of the research flagged in this paper shows that:
- (a) insufficient recycling knowledge can be a significant barrier in relation to recycling. Messaging on packaging can remedy this. This can be done through visual attributes (eg labels/symbols). However, these can also increase complexity if consumers do not understand the labels. One type of generic labelling that might work are anti-littering labels, if prominent enough.
 - (b) consumers need to be able to distinguish easily between different types of material to be able to recycle it properly.
 - (c) it is important that consumers perceive the packaging to be high value for the recycling process. Otherwise, they might feel inclined not to put in the effort to recycle the material.
 - (d) inconvenience is an important factor in hindering recycling. This is influenced by the specific sorting system. Thus, making the packaging easier to sort can have a positive impact on recycling rates.
90. Two studies from Sweden further explore the role that packaging can play in the recycling process:
- (a) in Williams et al (2012)¹³⁸ the waste behaviour of 61 households is tracked over a two-month period to see whether there are any differences in attitudes towards recycling between types of consumers. Greener consumers were more perceptive of the role that packaging played in potentially leading to more food waste. Issues flagged were that sometimes the packaging made it difficult to use all the food inside or it

¹³⁷ [“The Role of Food Packaging Design in Consumer Recycling Behavior – A literature review”](#) by B. Nemat, M. Razzaghi, K. Bolton and K. Rosta (2019)

¹³⁸ [“Reasons for household food waste with special attention to packaging”](#) H. Williams, F. Wikström, T. Otterbring, M. Löfgren, A. Gustafsson (2012)

was simply too large. In their sample, around 20% to 25% of the food waste was related to design attributes of the packaging.

(b) Williams et al (2018)¹³⁹ further explores reasons on how packaging impacts recycling through interviews with Swedish households. It finds various obstacles such as:

- i) the packaging would have to be cleaned before it was recycled;
- ii) the packaging consisted of a mixture of different parts which need to be recycled differently;
- iii) some packaging is difficult to compress.

91. Sometimes having more packaging for a product can actually have a positive environmental impact. Verghese et al (2015)¹⁴⁰ explores how to minimise food waste across the entire supply chain. For the designing of packaging, it is most important to minimise the waste at the consumer end as this accounts for a larger proportion of the environmental impact when compared to the rest of the supply chain. For consumers there is a trade-off with packaging and food waste. In some instances, increasing the amount of packaging (and thus packaging waste) can be offset if this additional packaging significantly reduces food waste. Manufacturers need to balance these two considerations carefully.

92. This positive trade-off between two types of waste is also recognised by Wikström et al (2013)¹⁴¹, which flags that making packaging resealable or packaging individual portions can help consumers reduce food waste.

¹³⁹ “Decisions on Recycling or Waste: How Packaging Affect the Fate of Used packaging in Selected Swedish Households” by H. Williams, F Wikström, K. Wetter-Edman and P. Kirstensson (2018)

¹⁴⁰ “Packaging’s role in Minimizing Food Loss and Waste Across the Supply Chain” by K. Verghese, H. Lewis, S. Lockrey and H. Williams (2015)

¹⁴¹ “The influence of packaging attributes on consumer behaviour in food-packaging LCA studies – a neglected topic” by F. Wikström , H. Williams, K. Verghese and S. Clune (2013)

Annex B: Sustainability in the fashion sector

93. In this section we consider sustainability claims in the fashion sector, including the role of consumers and how firms can specifically target them with green messaging. These materials look at some of the issues in the fashion sector on the side of consumers and give examples on how it could be remedied.
94. A book by Prof Strähle¹⁴² contains several papers that discuss these issues. Some relevant highlights for this paper include:
- (a) consumers need to keep sustainability in mind when making clothing purchases. Sometimes consumers have insufficient information to properly change their consumption behaviour.¹⁴³
 - (b) firms may have an incentive to greenwash their fashion products if this positively influences public perception of their brand. This could eventually lead to consumers no longer trusting these types of statements however.¹⁴⁴
 - (c) several studies are mentioned showing that consumers have insufficient knowledge in relation to environmental impact of fashion and the need for recycling, for example one study shows that 30% of fashion consumers do not read the information provided on product labels.¹⁴⁵
95. Shen et al (2013)¹⁴⁶ explores consumer awareness of sustainable fashion. This was done through a written survey at a university with a sample size of 306. The survey explored knowledge and attitude towards sustainable fashion. It found that in several areas consumers did not have sufficient knowledge of sustainable fashion. This included materials and the manufacturing processes as well as the option to buy second-hand fashion. It further found that indicators such as age and income are related to sustainable fashion, with younger and more affluent people showing positive correlations to sustainable fashion.
96. A report by the Danish Fashion Institute¹⁴⁷ discusses the barriers to sustainable fashion consumption. The report divides these barriers into three

¹⁴² “[Green Fashion Retail](#)” by J. Strähle (2017), J Strähle is a professor of International Fashion Management at Reutlingen University in Germany .

¹⁴³ Page 17

¹⁴⁴ Page 19

¹⁴⁵ Page 57,60-61

¹⁴⁶ “[Consumers’ awareness of sustainable fashion](#)” by D. Shen, J. Richards and F. Liu (2013)

¹⁴⁷ “[The Nice Consumer](#)” by Danish Fashion Institute (2012)

distinct groups, namely barriers to purchasing, caring for and recycling fashion. In relation to purchasing, the barriers mentioned are:

- (a) consumers having a low knowledge concerning the sustainability impact of clothing production and consumption.
 - (b) difficulty in finding sustainable products; sometimes the information is not available on the product or on a brand website.
 - (c) sustainable products might come at a price premium, which some consumers might consider too expensive. Price is the most decisive factor when consumers consider buying fashion. This is especially true when some consumers like buying new clothes regularly.
 - (d) some consumers think that sustainable clothing is not stylish or fashionable.
97. Visser et al (2015)¹⁴⁸ looks at how to effectively market sustainable shoes to mainstream consumers instead of simply appealing to consumers who are already environmentally conscious. The paper hypothesised that the colour of the advert as well as the communicated benefit and heritage of the product can play a role in marketing sustainable shoes. It tested this through an experiment among 600 students, where they were presented with different versions of an advertisement. The experiment found that:
- (a) using a green/environmental colour scheme instead of a red one did not increase buying intention on its own.
 - (b) there was a small significant effect on being presented a personal benefit in combination with the environmental one (e.g. *'Made of natural material that protect your foot health'* versus *'made of natural materials that protect the environment'*). This effect became stronger when combined with the green layout mentioned above.

¹⁴⁸ "Communicating Sustainable Shoes to Mainstream Consumers: The Impact of Advertisement Design on Buying Intention" by M. Visser, V. Gattol and R. Van der Helm (2015)

Annex C: Studies used in this literature review

Title	Author(s)	Year	Sector	Methodology	Question(s) addressed
Accenture April survey	Accenture	2019	General	Survey	- Consumer attitudes towards sustainability
Assessment of Green Claims on Products	DEFRA	2010	General	Research	- Prevalence of claims
Communicating Sustainable Shoes to Mainstream Consumers: The Impact of advertisement Design on Buying Intention	M. Visser, V. Gattol and R. Van der Helm	2015	Fashion (shoes)	Experiment	- How to effectively target green claims in fashion
Consumer Action Monitor (CAM) report	Ombudsman services	2020	Energy and telecoms	Survey	- Consumer attitudes towards sustainability
Consumers' attitudes towards cross-border trade and consumer protection	European Commission	2018	General	Survey	- Consumer attitudes towards sustainability - The effects of green claims on consumer decisions
Consumer effects of environmental impact in product labelling	R. Krishnan	2011	General	Survey	- Effects of green claims on consumers
Consumer Market Study on Environmental Claims for non-food products	European Commission	2014	Non-food	Literature review, survey, desk research and stakeholder engagement	- Prevalence of claims - Consumer attitudes towards sustainability - Consumer understanding of labelling

Consumer Preferences, Ecolabels, and Effects of Negative Environmental Information	X. Chen, F. Alfnes and K Rickertsen	2015	Seafood	Experiment	<ul style="list-style-type: none"> - Impact of information on consumers - Impact of green claims on WTP
Consumers' awareness of sustainable fashion	D. Shen, J. Richards and F. Liu	2013	Fashion	Survey	<ul style="list-style-type: none"> - Sustainability in Fashion
Consumer stated preferences for dairy products with carbon footprint labels in Italy	C. Canavari and S. Coderoni	2020	Milk	Literature review, survey	<ul style="list-style-type: none"> - Effects of green claims on consumers
Decisions on Recycling or Waste: How Packaging Affect the Fate of Used packaging in Selected Swedish Households	H. Williams, F. Wikström, K. Wetter-Edman and P. Kirstensson	2018	Packaging	Interviews	<ul style="list-style-type: none"> - Relationship between packaging and recycling / waste
Different Shades of Greenwashing: Consumer's Reactions to Environmental Lies, Half-Lies and Organizations Taking Credit for Following Legal Obligations	M. de Jong, G. Huluba and A. Beldad	2020	Cruises	Experiment	<ul style="list-style-type: none"> - Effects of greenwashing on consumers
Do Green Products Make Us Better People?	N. Mazar and C. Zhong	2010	General	Experiment	<ul style="list-style-type: none"> - Effects of green claims on consumers
Environmental claims on supermarket seafood	ClientEarth	2011	Seafood	Field research	<ul style="list-style-type: none"> - Examining potentially misleading claims

Evaluation of the DECC/John Lewis energy labelling trial	Department of Energy & Climate Change, John Lewis and the Behavioural Insights Team	2014	Electric appliances	Experiment	- Effects of green claims / improved labelling on consumers
Factors Affecting Green Purchase Behaviour and Future Research Directions	Y. Joshi and Z. Rahman	2015	General	Literature review	- Stated versus actual consumer behaviour
Factors affecting Scepticism towards Green Advertising	M. Finisterra and R. Reis	2012	General	Survey	- Effects of green claims on consumers
Go Green! Should environmental messages be so assertive?	A Kronrod	2012	General	Experiment	- Targeting of green claims
Good and Guilt-Free: The Role of self-Accountability in Influencing Preferences for Products with Ethical Attributes	J. Pelozo, K. White and J. Shang	2013	General	Experiment	- Targeting of green claims
Green Fashion Retail	J. Straehle	2017	Fashion	Study book	- Sustainability in Fashion
Greenwash and Green Trust: The Mediation Effects of Green Consumer Confusion and Green Perceived Risk	Y. Chen and C. Chang	2013	Electronics	Survey	- Effects of greenwashing on consumers
How can environmental information align consumer behaviour with attitude? Evidence from a field experiment	P. Vlaeminck, T. Jian and L. Vranken	2014	Supermarket	Experiment	- Impact of information on consumers

How does environmental concern influence specific environmentally related behaviours? A new answer to an old question	S. Bamberg	2003	Energy	Survey	- Stated versus actual consumer behaviour
Improving online disclosures with behavioural insights	OECD	2018	General	General paper	- Impact of information on consumers
Learning from consumers: How shifting demands are shaping companies' circular economy transition. A circular economy survey	Ing	2019	Fashion, food, electronics	Survey	- Consumer attitudes towards sustainability
Making Green Stuff? Effects of Corporate Greenwashing on Consumers	M. De Jong, K. Harking and S. Barth	2018	Detergent / perfumes	Experiment	- Effects of greenwashing on consumers
Packaging's role in Minimizing Food Loss and Waste Across the Supply Chain	K. Verghese, H. Lewis, S. Lockrey and H. Williams	2015	Recycling	Desk research	- Relationship between packaging and recycling / waste
Perceived Greenwashing: The Interactive Effects of Green Advertising and Corporate Environmental Performance on Consumer Reactions	G. Nyilasy, H. Gangadharbatla and A. Paladino	2014	General	Experiment	- Effect of green claims on consumers

Reaction of the ACM to the consultation of the European Commission's legislative initiative 'Empowering consumers for the Green Transition'	ACM	2020	General	General paper	- Impact of information on consumers
Reasons for household food waste with special attention to packaging	H. Williams, F. Wikström, T. Otterbring, M. Löfgren and A. Gustafsson	2012	Packaging	Data collection / survey	- Relationship between packaging and recycling / waste
Renewable Energy Tariffs: The problem of Greenwashing	Good Energy	2020	Energy	General research	- Examining potentially misleading claims
Sustainable food consumption: Exploring the Consumer "Attitude – Behavioural Intention" gap	I Vermeir and W. Verbeke	2006	Food	Survey	- Stated versus actual consumer behaviour
Sustainability in the Food Sector: A consumer behaviour perspective	K. Grunert	2011	Food	General research	- Impact of information on consumers
Sustainability labels on food products: Consumer motivation, understand and use	K. Grunert, S. Hieke and J. Wills	2013	General	Survey	- Consumer understanding of labelling
Sustainability Products in a Circular Economy – Towards an EU Product Policy Framework contributing to the Circular Economy	European Commission	2019	General	Stakeholder engagement	- Consumer attitudes towards sustainability - Consumer understanding of labelling

The EC Consumer Conditions Scoreboard	European Commission	2019	General	Survey	<ul style="list-style-type: none"> - Consumer attitudes towards sustainability - The effects of green claims on consumer decisions
The Elusive Green Consumer	K. White, D Hardisty and R. Habib	2019	General	Article, mention of survey	<ul style="list-style-type: none"> - Stated versus actual consumer behaviour
The Green BPC Consumer UK	Mintel	2020	Body / personal care	Survey	<ul style="list-style-type: none"> - Consumer attitudes towards sustainability
The Green Household Care Consumer	Mintel	2019	Household care	Survey	<ul style="list-style-type: none"> - Consumer attitudes towards sustainability
The Impact of Sustainability Information on Consumer Decision Making	D. O'Rourke and A. Ringer	2016	Online	Data analysis	<ul style="list-style-type: none"> - Impact of information on consumers
The influence of packaging attributes on consumer behaviour in food-packaging LCA studies – a neglected topic	F. Wikström, H. Williams, K. Verghese and S. Clune	2013	Packaging	General research	<ul style="list-style-type: none"> - Relationship between packaging and recycling / waste
Green Goes Mainstream? Customer service and the green agenda	The Institute of Customer Service	2021	General	General research (includes surveys)	<ul style="list-style-type: none"> - The effects of green agenda on consumer decisions - How to present environmental claims
The Nice Consumer	Danish Fashion Institute	2012	Fashion	General research	<ul style="list-style-type: none"> - Sustainability in Fashion
The Role of Food Packaging Design in Consumer Recycling Behavior – A literature review	B. Nemat, M. Razzaghi, K. Bolton and K. Rousta	2019	Recycling	Literature review	<ul style="list-style-type: none"> - Relationship between packaging and recycling / waste

The Sustainability Liability: Potential Negative Effects of Ethicality on Product Preference	M. Luchs, R. Naylor, J. Irwin and R. Raghunathan	2010	General	Survey	- Effects of green claims on consumers
Thinking green, buying green? Drivers of pro-environmental purchasing behaviour	A. Moser	2015	General	Data analysis	- Targeting of green claims