AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

ESRI Working Paper No. 792

October
2024

Fashion, Fast or Slow? Effects of binary and graded eco-labels on sustainable clothing purchases

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Acknowledgements:
This research was funded by the Environmental Protection Agency as part of Phase IV of the EPA-ESRI Research Programme. We are grateful to Andréa Nicholenas for assistance in selecting the clothing used in the simulated store. We thank EPA Officers Fiona McCoole and Annmarie Tuohy and staff at the Rediscovery Centre for helpful comments on preliminary findings. We also thank members of the EPA-ESRI Research Programme Steering Group for their feedback.

Abstract

Excess clothing consumption severely harms the environment, through greenhouse gas emissions, resource degradation and water pollution. For consumers, however, the trade-off between this environmental impact and the convenience of "fast fashion" is hidden at the point of purchase. We present a pre-registered, experimental test of two clothing eco-labelling systems using a large, representative sample of consumers (N = 1,200). Participants used a simulated online clothing store, with some chosen at random to receive their selected items. They were randomised to see (i) a binary label, informed by existing policy, applied to the most sustainable products, (ii) a colour-coded, graded "eco-score" applied to all products, or (iii) no label. Compared to the control condition, participants exposed to binary label chose 10% more sustainable products. Eco-score participants, however, chose 20% more, and were twice as likely to exclusively buy the most sustainable products. There was no effect on the number of items purchased, implying a shift towards more sustainably produced clothing. Exploratory analyses revealed that the effects were driven by greater salience of the eco-score system and that effects were stronger among those most concerned about the environment. Those who saw the eco-labels reported the same level of shopping satisfaction and willingness to wear selected clothes as those in the control condition. Additional findings revealed a general underestimation of clothing production's environmental impact and strong support for implementing the eco-score both online and in-store. The results have implications for enabling informed consumer choice in the clothing market.

Keywords: fast fashion; clothing; eco-label; experiment; consumer choice; environmental policy

1. Introduction

Producing clothes causes 10% of global greenhouse gas emissions, 20% of industrial water pollution and 35% of oceanic microplastic pollution (Niinimäki et al., 2020). This environmental impact has surged in recent decades, driven partly by necessity (e.g., population growth and improved standards of living) but also by overconsumption in high-income countries (Peters, Li & Lenzen, 2021). Mass produced, low-cost clothing inspired by the latest trends (i.e., "fast fashion") has made clothing more affordable and less durable, meaning many items are discarded after few uses (Bick, Halsey & Ekenga, 2018).

High levels of clothing consumption and waste appear to contradict findings that vast majorities of consumers are concerned about climate change and environmental damage (Vlanesceu et al., 2024). Evidence from psychology and behavioural economics helps to explain this discrepancy. Producing more durable, "slower" fashion is costly, meaning that sustainable firms struggle to compete against those using low-cost labour and highly polluting materials in a market dominated by aesthetics and price sensitivity (Kleinhückelkotten & Neitzke, 2019; Munasinghe, Dissanayake & Druckman, 2022; Niinimäki & Hassi, 2011). Environmental concern may be widespread, but environmental costs are not communicated at the point of purchase, making it difficult for consumers to accurately compare products (Gabaix & Laibson, 2006; Tiefenbeck et al., 2018). In other words, the trade-off between environmental impact and price is hidden. The challenge for consumers is compounded by widespread "greenwashing" (i.e., misleading claims about environmental performance) (Delmas & Burbano, 2011; Timmons, Whelan & Kelly, 2024). Our aim was to test whether revealing the environmental impact of clothing products while shopping leads consumers to choose more sustainable options. We tested two labelling systems, informed by existing textile policy and evidence on effective information labelling.

1.1 Literature Review

1.1.1 Eco-Labels

Labels that communicate environmental information to consumers ("eco-labels") are an attractive policy instrument (Wojnarowska, Sołtysik & Prusak, 2021). When designed well, they enable consumers to make more informed decisions without restricting choices (De Boer, 2003; Thøgersen, 2000). They may also act as a lever for improved competition, as companies adjust their practices in order to earn desirable labels (Galarraga Gallastegui, 2002; Hamilton & Zilberman, 2006; Ibanez & Grolleau, 2008). Thus, eco-labels can operate at both the consumer level and to generate systems change (Millward-Hopkins, Purnell & Baurley, 2023; Chater & Loewenstein, 2023).

Applying eco-labels to clothing further makes sense from an environmental perspective. Many high-impact climate change mitigation actions have low behavioural plasticity (e.g., home retrofitting; Nisa, Bélanger, Schumpe & Faller, 2019), but for consumers in high-income countries, high frequency purchases of fast fashion is a luxury. Mitigation comes from brand substitution or even inaction (i.e., not purchasing additional clothing), rather than costly investment. As such, shifting non-essential clothing spend towards more sustainably produced clothing should, in theory, be much more achievable, particularly among those with high environmental concern.

An important caveat, however, is that the effectiveness of eco-labels depends on their design. Labels need to be recognisable, salient and convey accurate information to consumers in a way that is easily understood (Brach, Walsh & Shaw, 2018; Wojnarowska et al., 2021). The range of different design decisions means that, despite decades of research, questions over

how to design effective labels persist (Meis-Harris et al., 2021; Torma & Thøgersen, 2021). Our aim was to test two prominent systems: binary and graded.

With a binary system, products that reach certain standards are accredited with a label (e.g., the EU Ecolabel and the Fairtrade label; Figure 1). Such labels are presumed to be simple for consumers to understand and are relatively straightforward to implement. Once a specified criterion is met, the label is applied. Binary systems are widespread; of the 103 textile labels listed on ecolabel.eu, all but one are binary. Consequently, binary labels have received most academic attention. In a recent systematic review of labelling experiments, 24 of 26 experiments tested binary approaches, with most having small positive effects (Majer et al.,

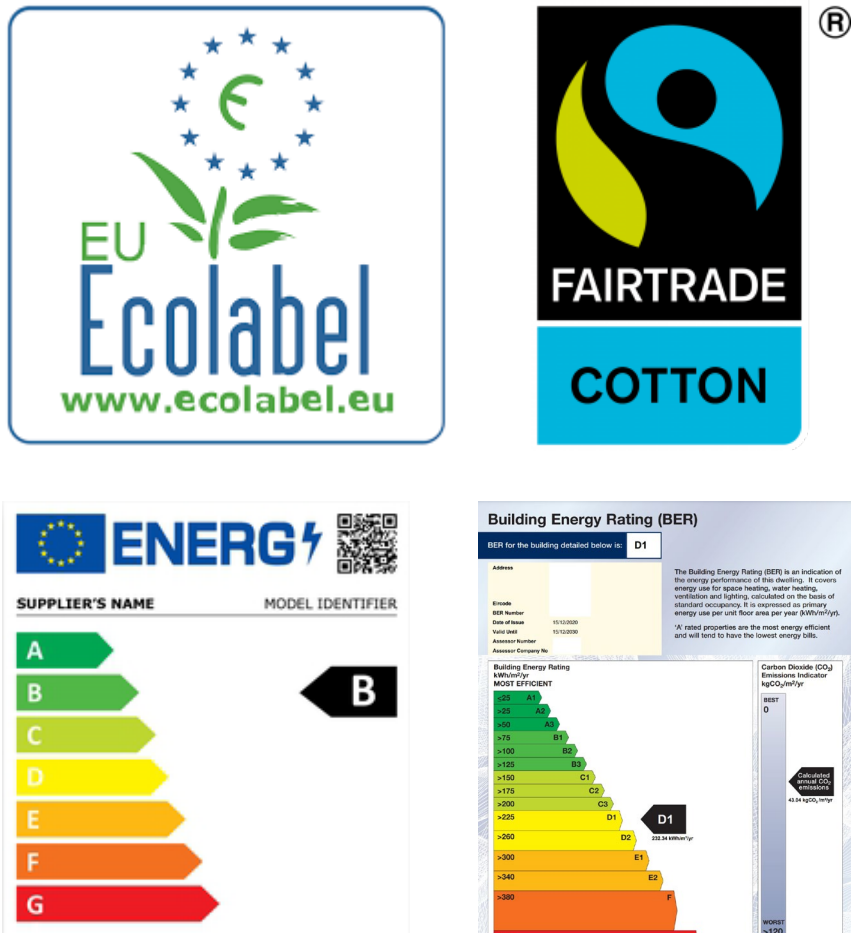

Figure 1. Example existing eco-labels. Binary labels are shown on the top (left: EU Ecolabel; right: Fairtrade organic cotton) and graded systems are shown on the bottom (left: EU Energy Efficiency; right: Ireland's Building Energy Rating).

2022).

The primary alternative to a binary labelling system is a graded system, where products are ranked according to the attribute of interest, usually using a combination of letters (with 'A' being the best performing) and colours (using a traffic light system) (Ölander & Thøgersen, 2014; although grayscale may be as effective, Bengart & Vogt, 2023). Examples include the EU Energy Efficiency label and the Building Energy Rating in Ireland (Figure 1). Most research on graded labels, however, has focused on nutrition (Temple, 2020), with the French horizontal A-E 'Nutriscore' emerging as the most effective system (An et al., 2021; Crosetto, Lacroix, Muller & Ruffieux, 2020; Crosetto, Muller, Ruffieux, 2024). For example, Robertson, Andersson and Lunn (2023) used an online grocery store experiment to test the effects of Nutriscore labelling on purchases of high fat, salt and sugar foods. Results show that consumers exposed to Nutriscore labelling make healthier food choices. Importantly, choices in the study were not simply hypothetical. Participants were selected at random to really receive the snacks they purchased, making the experiment "incentive-compatible" (Clot, Grolleau & Ibanez, 2018). Such lottery systems are as effective at eliciting real preferences as paying all participants in full (Charness, Gneezy & Halladay, 2016).

Despite strong evidence supporting Nutriscore labelling for nutritional choices, few studies have directly compared binary and graded systems with environmental outcomes. Most of those we could locate recorded hypothetical choices and typically show that graded, traffic light systems outperform binary ones for consumer decisions about food and grocery products (Holenweger et al., 2023; Muller et al., 2019; Ní Choisdealbha & Lunn, 2020; Thøgersen & Nielsen, 2016). The evidence for real choices, however, is mixed. Vlaemick et al. (2014) show positive effects of a traffic-light eco-label in a grocery shopping field experiment,

whereas Slapø and Karevold (2019) report no significant effect on food choice in a cafeteria field experiment.

After food choice, eco-labels are most often tested on decisions about energy efficiency, but the evidence too is mixed. For example, in incentive-compatible online experiments, Thøgersen, Dessart, Marandola and Hille (2024) show that graded systems outperform binary ones in decisions about small electronics, but Andor, Gerster and Götte (2019) show no effect of the EU Energy Efficiency label on consumer willingness-to-pay for more efficient lightbulbs. We could locate no such tests for clothing purchase decisions.

1.1.2 Clothing Eco-Labels

Despite the well-established environmental impact of clothes production and global prevalence of clothes shopping, evidence on the effects of eco-labels in clothing decisions is limited. Most studies rely on surveys of attitudes towards sustainable clothing, showing general preferences for sustainable clothing, difficulty in identifying sustainable products, and broad support for independent accreditation systems (Harris, Roby & Dibb, 2015; Klemm & Kaufmann, 2024; Rausch & Kopplin, 2021). However, such attitudinal variables only weakly predict clothing-related greenhouse gas emissions (Nielsen et al., 2022).

Nonetheless, given positive survey evidence and existence of over 100 third-party labels in the EU alone, perhaps existing binary eco-labels are sufficient. The EU Ecolabel, which aims to provide consumers with reliable information across a broad portfolio of products, is the most widely applied textile label (Cordella et al., 2020). However, the scheme is voluntary, meaning absence of the label is an ambiguous signal for consumers, and its implementation is viewed as poorly coordinated and monitored (Marrucci et al., 2021). Moreover, most eco-

labels displayed in the market tend to be ones developed by producers rather than ones that require independent, third-party accreditation (Gossen et al., 2022).

Despite the abundance of (official and unofficial) textile eco-labels, we could locate just one experimental test of a clothing eco-label. Feuß et al. (2022) tested a binary system in a field experiment in partnership with an online retailer. Customers visiting the website were randomised to a control condition or to see a green banner with the word "sustainable" written on it featured on almost 600 products (which had been independently accredited with the EU Ecolabel or for use of organic cotton). Analysis of over 2,500 purchases showed an 8.3% increase in purchases of labelled products. The authors note, however, that "the effectiveness of [clothing] eco-labels can be substantially improved" (Feuß et al., 2022, p. 10).

1.2 Hypotheses

Feuß et al. (2022) thus provide evidence that clothing eco-labels can alter real consumer behaviour in favour of sustainable clothing. Building on this, we aimed to compare the effectiveness of a binary system with a graded labelling system. We adapted Robertson et al.'s (2023) online grocery store to feature clothing products and employed the same incentive-compatible lottery where participants were selected at random to really receive the items they added to their cart (see also Thøgersen et al., 2024). Participants were assigned at random to one of three conditions: a binary eco-label based on the EU Ecolabel, a Nutriscore-inspired "eco-score" label, or to a control condition. Thus, our first pre-registered[1] hypotheses were:

[1] https://osf.io/r83xg

H1a: Participants who see any eco-label will choose more environmentally friendly clothing products than participants in the control condition, and…

H1b: … participants who see the eco-score label will differ in their choices from those who see the binary label.

Given the equivocal evidence base for eco-labels, our hypothesis on the difference between labelling systems was non-directional.

In addition to the sustainability of clothing purchases, we pre-registered interest in secondary outcomes. Consumers can reduce their clothing impact by not only shifting towards more sustainable producers but also by reducing how many clothes they purchase in general. Eco-labels may make the environmental impact of clothing more salient to consumers and thus reduce overall purchasing, or they may licence otherwise conscious consumers to purchase more clothing (Blanken, van den Ven & Zeelenberg, 2015). Thus, a secondary, pre-registered and non-directional hypothesis of interest was:

H2: Eco-labels will influence the number of clothing items purchased.

A benefit of using an online experiment to test for eco-label effects is the ability to record data on participant characteristics. Previous research shows that the effect of eco-labels can be moderated by characteristics such as environmental concern and socio-demographic factors (e.g., age and gender) (Clancy, Fröling & Peters, 2015; Grunert, Hieke & Wills, 2014; Majer et al., 2022; Schwartz, Loewenstein & Agüero-Gaete, 2020; Thøgersen, Haugaard & Olesen, 2010). As such, we pre-registered exploratory interest in the moderating effects of age, gender, environmental clothing concern and clothes purchasing behaviour (e.g., to test to if eco-labels function differently for high frequency shoppers).

We also recorded multiple survey measures after participants had made their purchase decisions. These included satisfaction with their purchase decisions and willingness to wear purchased clothing. While of secondary interest in this study, such measures have important policy implications. If consumers choose more sustainable options but report lower satisfaction with their shopping experience or that they are less likely to wear what they've bought, implementing an eco-labelling system may meet stronger industry resistance or undermine sustainability efforts by leading to higher product turnover.

Similarly, we recorded perceptions of the environmental impact of clothes production and of specific brands familiar to participants in the study, with the logic being that if consumers are already aware of the environmental impact, there may be little additional benefit to implementing a labelling system. Finally, we measured consumer support for clothing eco-labels. We were interested primarily in the descriptive responses to these measures but pre-registered exploratory interest in whether they were altered by exposure to eco-labels during the shopping task.

2. Method

2.1 Participants

One thousand and two hundred[2] adults in Ireland were recruited by a market research agency[3] to be nationally representative by age, gender, location and socio-economic status (Table 1). Very few (5.9%) reported never having shopped online, with the majority (69.7%) doing so at least once every few months. Sample size was set to allow for approximately 400 participants per condition, based on previous nutritional labelling research in the same population (Robertson et al., 2023). Participants were paid €3 for completing the study, which took a median of 14 minutes. Data were collected in July 2024. The study was undertaken in accordance with institutional ethics policy.

Table 1. Sample Socio-Demographics.

		n	%	CSO Estimate
Gender	Men	564	47.0	49.0
	Women	633	52.8	51.0
	Non-Binary/Other	3	0.3	-
Age	18-39 years	469	39.1	36.8
	40-59 years	418	34.8	36.5
	60+ years	313	26.1	26.7
Education	Secondary or below	466	38.8	43.9
	Tertiary below degree	322	26.8	28.6
	Degree or above	412	34.3	27.5
Region	Leinster (incl. Dublin)	657	54.8	55.7
	Munster	333	27.8	26.7
	Connacht/Ulster	210	17.5	17.6

Note: The Census does not record non-binary as a gender. We proxied socio-economic status through "social grade," a market research measure based on the occupation of the chief income earner in the household. However, the Census does not record social grade, so we instead use here educational attainment. The small discrepancy between our sample and the Census on educational attainment is likely driven by there being few individuals over 80 in our sample.

[2] A further 310 participants were recruited but did not complete the study. One hundred and five failed a forced-response attention check, 66 exited during the shop and a 139 exited at other stages of the study. Data from these participants were not accessed.

[3] RedC Live (https://www.redclive.ie/), which is a panel of over 40,000 members with an additional 200-500 added per month via online and offline recruitment efforts (including probability sampling and advertisements). Data quality has been validated against real outcomes (e.g., https://redcresearch.com/wp-content/uploads/2024/01/Slide2-1024x576-1.jpg).

2.2 Materials and Design

Full materials are available in the Appendix and on the project's Open Science Framework page (https://osf.io/j6dzk/). Participants were informed that the study was about how people shop for clothes online; they were not made aware of the environmental focus of the study until after using the online shop.

2.2.1 Online Shop

The shop was programmed using Gorilla Experiment Builder and was laptop, tablet and mobile compatible (Anwyl-Irvine et al., 2020). It contained four types of everyday clothing items (jeans, t-shirts, shorts and socks), available in men's and women's styles. Within these eight categories, there were 10 items available to purchase.[4] Prices ranged from €3.95 for the cheapest pair of socks to €179.95 for the most expensive pair of jeans (M = €27.50, Mdn = €45.78, SD = €42.95). All products, prices and brands were real and available for shipping to Ireland. Products were selected to represent a range of environmental impact, which was determined at the brand level using ratings by GoodOnYou.[5] GoodOnYou rates brands using publicly available information from clothing company websites, including public reporting of resource use and waste management, data from third party indices (e.g., Fashion Transparency Index) and company accreditations (e.g., Cradle to Cradle). The approach can hence be considered a 'meta-sustainability' label (Torma & Thøgersen, 2024). For our purposes, GoodOnYou 'Planet' scores were converted from their 1 to 5 scale to an A to E scale, with 5s converted to an A, and so on. We selected two items from each point on the scale for each of the eight clothing categories. The correlation between price and environmental impact was non-significant (Spearman's $\rho = 0.17$, $p = .122$). All participants saw the same items, prices and brands, although the on-screen position of items within categories was shuffled for each participant.

Participants were instructed to use the shop as if they were shopping for real. They were informed that they may be selected at random to receive the items they choose, so to only choose things they wanted. The software selected their budget at random from a range of €180 to €540 with intervals of €10. We opted to vary the available budget to allow for tests of

[4] There was an 11th t-shirt (an alternative colour for another) available for both men and women.
[5] https://goodonyou.eco/

whether the eco-labels have different effects under varying budget constraints. This range was selected to allow for all participants to buy at least one of the most expensive items with some affording to buy three. Participants were instructed that they could use as much or as little of this budget as they like and anything unspent was not redeemable for cash.

Figure 1 depicts the online shop. A navigation bar at the top of the screen showed the eight clothing categories. The shop displayed images of each clothing item with a short description, the brand and the price. Clicking on an item allowed participants to see a larger image (with a zoom function) and a more detailed description of the materials of the clothing, adapted from the real descriptions of the items from their respective websites. The participant's cart displayed on the right hand side of the screen and showed any items added, along with their current spend and any remaining budget. The cart also had a function for removing items. If a participant tried to purchase something that exceeded their budget, a red warning showed and the participant was asked choose another item within their budget or to remove other items from their cart.

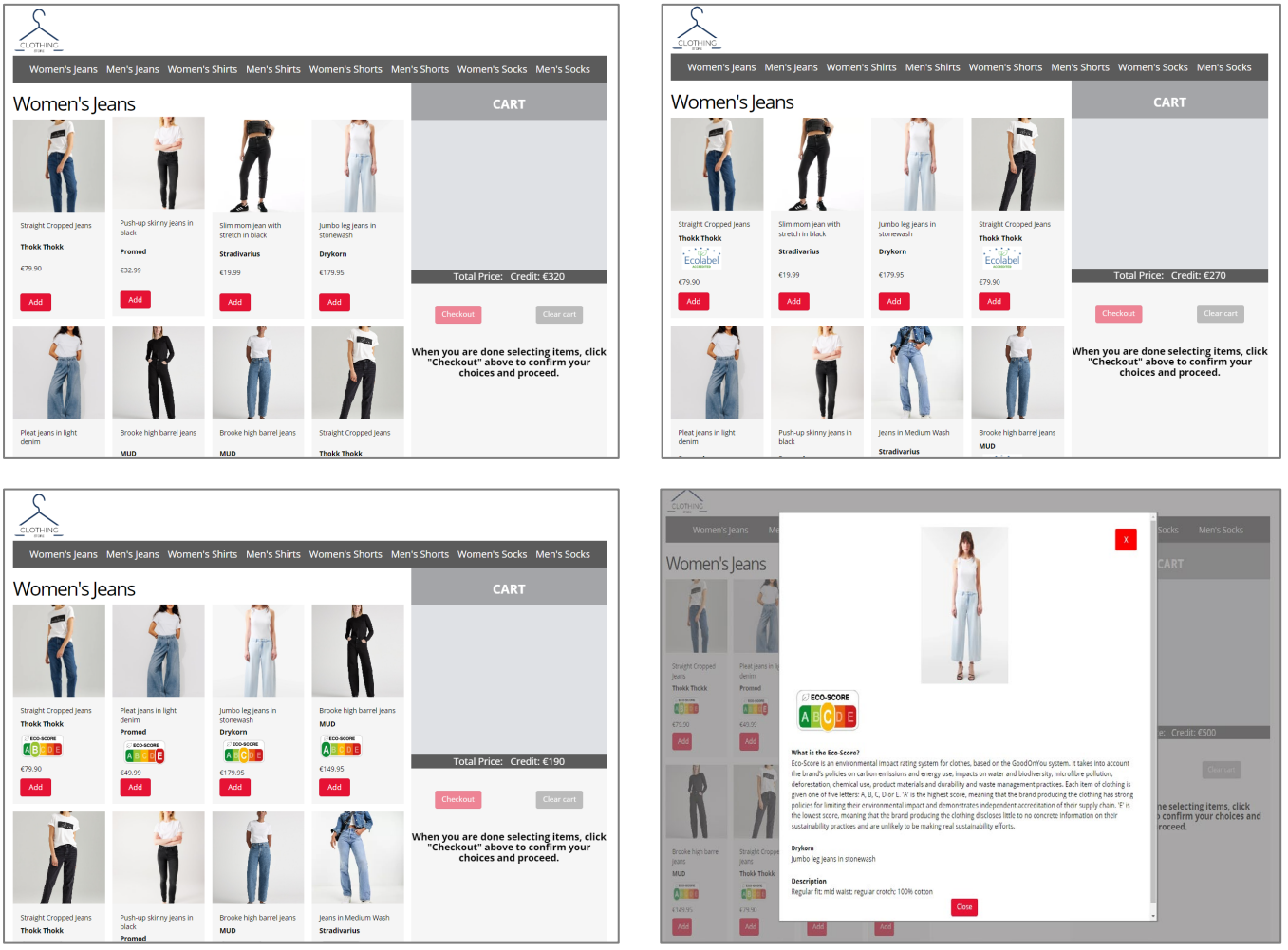

Figure 2. Screenshots from the online shop, showing the control condition (top left), the binary label condition (top right), the eco-score condition (bottom left) and eco-score description (bottom right).

The only difference between experimental conditions was the eco-label. The computer software randomised participants into one of three conditions. The control condition (n = 404) saw the shop as described above, with no additional environmental impact information. The "binary label" condition (n = 377) saw an adapted version of the EU Ecolabel displayed under the description of each of the A- and B-rated products (Figure 3). The "eco-score" condition (n = 419) saw a Nutriscore-style eco-label applied to each product, showing its A-E rating (Figure 3). To reduce experimenter demand (i.e., that participants might suspect the aims of the study and change their behaviour accordingly (Zizzo, 2010), we opted not to explain the eco-labels to participants in instructions, similar to Robertson et al. (2023). Instead, descriptions of the binary label or eco-score appeared if participants clicked on any of the items displaying a label (i.e., only A- and B-rated items in the binary label condition and all items in the eco-score

condition). The description for the eco-score read:

> *Eco-Score is an environmental impact rating system for clothes, based on the GoodOnYou system. It takes into account the brand's policies on carbon emissions and energy use, impacts on water and biodiversity, microfibre pollution, deforestation, chemical use, product materials and durability and waste management practices. Each item of clothing is given one of five letters: A, B, C, D or E. 'A' is the highest score, meaning that the brand producing the clothing has strong policies for limiting their environmental impact and demonstrates independent accreditation of their supply chain. 'E' is the lowest score, meaning that the brand producing the clothing discloses little to no concrete information on their sustainability practices and are unlikely to be making real sustainability efforts.*

The binary label was similar, but in place of the five letter explanation it read that brands can display the label "if they have strong policies…" and brands that "disclose little to no concrete information…" cannot.

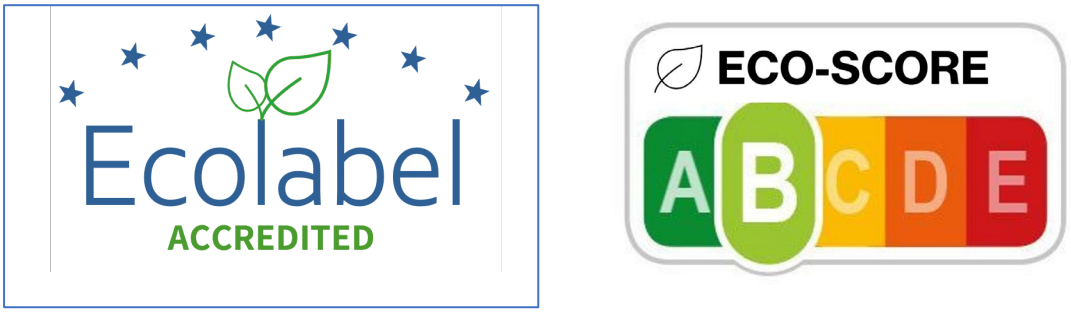

Figure 3. Binary eco-label (left) and graded eco-label ("eco-score") (right).

2.2.2 Other Measures

Before the shopping task, participants were asked how often they shop for clothes online and in-store. Unless they reported 'never' doing so, a follow-up question for both asked for an estimate of their typical spend when they shop. Doing so allowed us to generate an estimate of each participant's yearly clothing spend, while participants needed only consider their spend during a typical shopping episode.

After using the shop, participants were asked about their experience using the shop. They completed an open text question on what they believed was the purpose of the study and three rating scale questions on how easy they found the shop to use, their satisfaction with the shop

and how likely they were to wear the clothes they purchased, all on 1 (not at all) to 7 (very) scales. Participants then completed a series of measures: their typical shopping preferences, familiarity with brands in the shop, attention to environmental information during the shopping task, support for policy, perceptions of the environmental impact of clothes production and specific brands, and general concern for the environmental impact of clothing and climate change.

For shopping preferences, participants completed questions about how much attention they typically pay to clothing features when shopping: brand, comfort, ethical production, price, material quality, style and sustainability, on 7-point rating scales from 'none at all' to 'a great deal'. They were also asked how much attention they paid to environmental information during the shopping task, on the same type of rating scale, and asked to identify which, if any, eco-labels they saw during the shopping task from a selection of five (plus an 'I didn't notice any eco-labels' option).

We suspected that familiarity with more sustainable brands would be low. To measure familiarity, participants saw a list of seven brands available in the online shop, selected at random from the full list of 34 brands. They were asked to select which they had heard of before taking part in the study. We opted to show each participant just seven brands, as doing so simplified the task for participants and was sufficient to generate approximately 250 observations for each brand.

To measure perceptions of the environmental impact of clothing, they were asked to rank four sectors (food production, clothes production, waste, aviation and shipping) in order of global emissions. All participants then saw an explanation of the eco-score system, rated their support for mandating eco-labels as a policy for online and in-store purchases (on 7-point rating scales), and estimated the eco-score of 10 brands available on the high street in Ireland.

To measure concern, participants read a description of a character of their gender who behaves in ways that implies high levels of concern for the environmental impact of clothing:

> *[Sarah/David] tries to think about the environment when shopping for clothes. S/he doesn't have many clothes, just some basics that s/he 'mixes-and-matches.' If something gets worn out, Sarah/David tries to get it repaired before buying something new. S/he never shops on impulse. When s/he needs something, s/he usually tries second-hand*

clothes shops first before checking out local designers and small businesses. S/he looks for clothes made from organic, recycled or biodegradable materials instead of synthetic fibres like polyester and nylon and makes sure any dyed clothes are low-impact. Sarah/David donates any used clothes to charity shops or sends them to be recycled.

They rated their own similarity to the character on a 7-point rating scale (not at all to extremely similar) and then rated how worried they are about climate change in general on the same scale. Participants were asked to rate their similarity to a character rather than a direct question about their own behaviour to reduce social desirability.

At the end of the study, participants completed standard socio-demographic questions and those selected at random by computer software to receive the products they purchased were then asked for their sizing and shipping information.

3. Results

In this section we report the effects of eco-labels on clothing choices, followed by tests of interactions between the eco-label and characteristics of interest. We then summarise the other measures recorded, focusing on experiences using the shop, perceived impact of clothes production and support for policy.

3.1 Do eco-labels increase the proportion of sustainable clothes purchased?

To test the effects of eco-labels on sustainable clothing purchases, we generated a cart score for each participant for the proportion of A- and B-rated clothing items they purchased, as pre-registered. Most participants selected between 3 and 8 products. The median proportion of A/B purchases of was .33 (M = .37, SD = .29). Figure 2 shows a violin plot of the proportion of A/B purchases by eco-label condition. The distribution shows plot bulges at 0 and, to a lesser extent, 1. We treated these bulges as structural; we assumed consumers who avoided sustainable brands differ from those that choose from some, who in turn differ from those who chose only from sustainable brands (Williams, 2022). As such, we modelled responses using a zero-one-inflated beta (ZOIB) regression which allows for separate estimates of the effects on choosing (i) 'no' A/Bs, (ii) 'some' A/Bs and (iii) 'all' A/Bs (Buis, 2012). Statistical significance of the effects we report are the same using alternative models, including fractional response regression, logistic regression on choosing 'any' A/Bs and OLS regression (reported in the Supplementary Material (SM)).

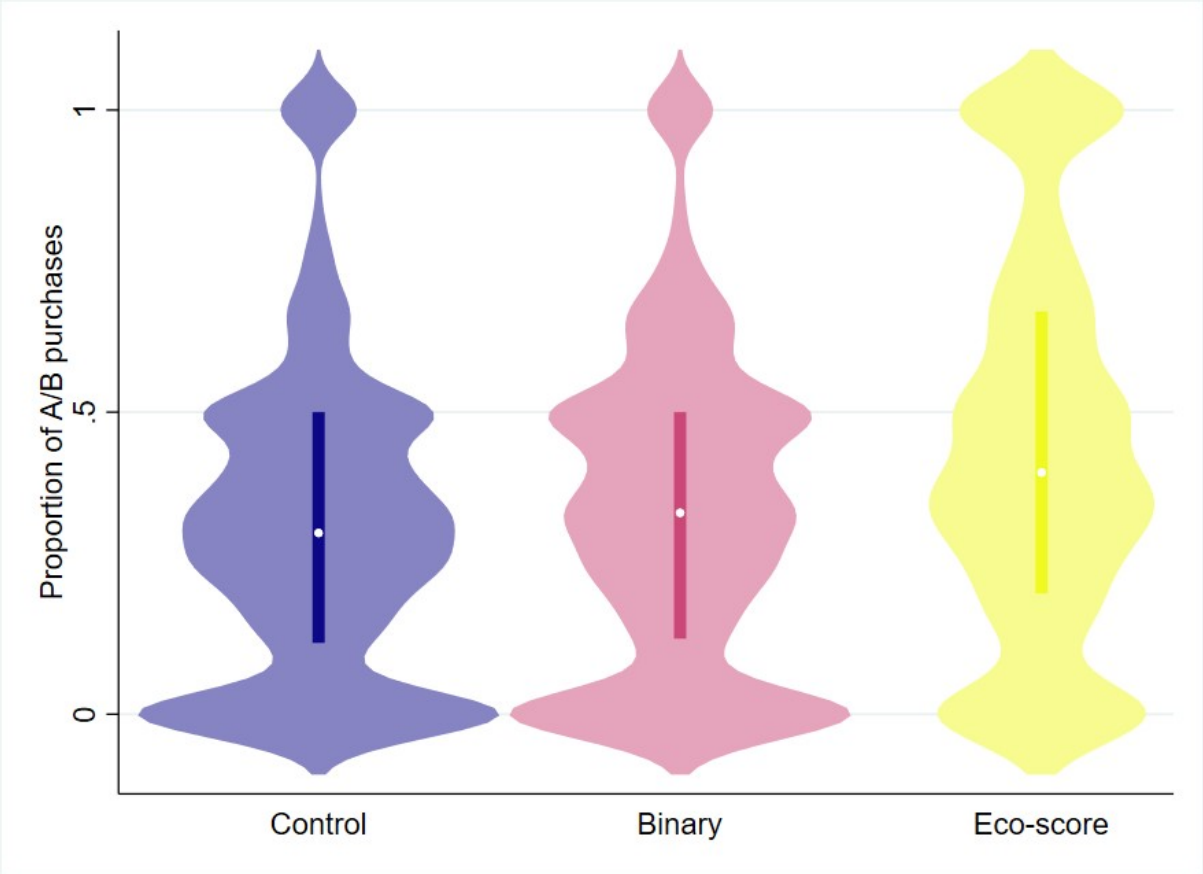

Figure 4. Violin plot showing distributions of the proportion of A/B products chosen by participants by condition. Box plots show the interquartile range with white dots representing the median.

The ZOIB model in Table 2 tests for an effect of eco-label condition on the proportion of A/B purchases, with pre-registered controls for the participant's randomly allocated budget and their age, gender, educational attainment, social grade and living area. (There is no evidence that the eco-labels functioned differently for those with different budgets; see the SM.) The model shows that both labels increased the proportion of A/B purchases for participants who bought some A/B items. The effect of the eco-score label was double that of the binary label (Wald test of equality of coefficients: $\chi^2 = 5.75$, $p = .017$). The model also shows a significant effect of the eco-score, but not the binary label, on increasing the proportion of participants who purchased all A/B items, and the difference between eco-score and binary label is again significant ($\chi^2 = 16.05$, $p < .001$). For no A/B purchases, the eco-score coefficient is strongly negative compared to the other conditions but the difference between it and the control condition is just marginally significant. There is no evidence for a difference between the labels ($\chi^2 = 2.00$, $p = .157$) on no A/B purchases.

The model shows few significant socio-demographic predictors of A/B purchases. The oldest participants (aged over 60) and those with degree-or-above educational attainment chose more A/Bs among those who bought 'some,' but differences at extreme ends are non-significant.

Table 2. Zero-One-Inflated Beta Regression Predicting Proportion of A/B Purchases.

	(1) No A/Bs	(2) Some A/Bs	(3) All A/Bs
Eco-Label (Ref: No Label)			
Binary†	-0.03	0.12*	-0.11
	[-0.32, 0.25]	[0.02, 0.22]	[-0.68, 0.45]
	$p = .429$	$p = .024$	$p = .372$
Eco-Score†	-0.29	0.26***	1.05***
	[-0.58, 0.01]	[0.16, 0.36]	[0.60, 1.50]
	$p = .054$	$p < .001$	$p < .001$
Budget	-0.09	0.02	-0.02
	[-0.23, 0.04]	[-0.02, 0.07]	[-0.22, 0.18]
	$p = .166$	$p = .296$	$p = .839$
Man (Ref: Woman)	-0.13	0.07	0.24
	[-0.42, 0.16]	[-0.02, 0.17]	[-0.21, 0.68]
	$p = .368$	$p = .134$	$p = .294$
Age (Ref: 18-39 years)			
40-59 years	-0.07	0.01	0.26
	[-0.42, 0.29]	[-0.11, 0.12]	[-0.27, 0.79]
	$p = .718$	$p = .917$	$p = .332$
60+ years	0.34	0.21**	0.33
	[-0.02, 0.70]	[0.09, 0.34]	[-0.23, 0.90]
	$p = .061$	$p = .001$	$p = .250$
Degree (Ref: Below degree)	-0.21	0.14**	0.03
	[-0.52, 0.10]	[0.03, 0.24]	[-0.44, 0.50]
	$p = .181$	$p = .009$	$p = .894$
Urban (Ref: Rural)	0.13	-0.06	-0.09
	[-0.17, 0.43]	[-0.16, 0.04]	[-0.54, 0.37]
	$p = .399$	$p = .245$	$p = .710$
ABC1 Social Grade (Ref: C2DEF)	-0.01	-0.01	0.14
	[-0.32, 0.29]	[-0.11, 0.10]	[-0.34, 0.62]
	$p = .925$	$p = .890$	$p = .562$
Constant	-0.76*	-0.71***	-2.94***
	[-1.39, -0.14]	[-0.92, -0.50]	[-3.95, -1.93]
	$p = .017$	$p < .001$	$p < .001$
Observations	1,200	1,200	1,200

*** p<0.001, ** p<0.01, * p<0.05, †One-tailed p-values due to pre-registered directional hypothesis.
Note. Confidence intervals in square brackets, at 95% for two-tailed tests and 90% for one-tailed tests as noted. Budget is divided by 100 to for presentation purposes. The results are the same if a control is added for the proportion of budget spent.

Figure 3 presents predicted probabilities of condition and shows large effects of the eco-score label. Relative to the control condition, the binary label increased the proportion of 'some'

A/B purchases by 10% (4ppt) whereas the eco-score label did so by 20% (7ppt). The binary label effect on 'all' A/B purchases is, in fact, negative (-28%; -2ppt) while the eco-score more than doubled the likelihood of a participant only choosing from the most sustainable brands (114%; 8ppt). Although just marginally significant in the model, the reduction on 'no' A/B purchases in the eco-score condition is moderate (23%; 6ppt).

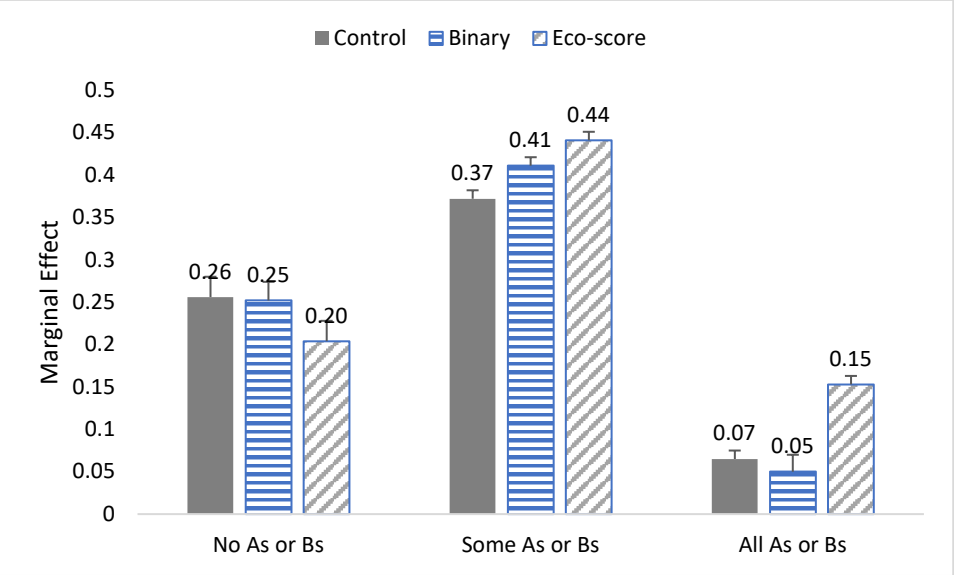

Figure 5. Predicted probabilities of label condition on choosing no A/Bs, some A/Bs and all A/Bs. Error bars are the standard error.

From these effects, the eco-labels, and particularly the eco-score, appear to have altered consumer choices by drawing attention to the differences in environmental impact of clothes in the online shop. Further exploratory analysis supports this inference. We ran an ordered logistic regression on self-reported attention to environmental information during the shopping task. Results, reported in full in the SM, show that participants in the eco-score condition paid greater attention to environmental information than participants in the binary label condition (marginal effects: $M_{\text{Eco-Score}} = 3.96$ out of 7, $SE = 0.09$, vs. $M_{\text{Binary}} = 3.28$, $SE = 0.10$; $\chi^2 = 24.40$, $p < .001$). Both groups paid more attention than the control group ($M = 2.79$, $SE = .10$; $b_{\text{Eco-Score}} = 1.09$, $SE = 0.13$, $p < .001$; $b_{\text{Binary}} = 0.48$, $SE = 0.13$, $p < .001$).[6]

[6] Participants reported normally paying most attention to comfort ($M = 6.28$, $SD = 0.97$, out of 7) followed by price ($M = 6.16$, $SD = 1.04$), style ($M = 5.80$, $SD = 1.27$) and quality ($M = 5.77$, $SD = 1.13$) and least attention

We ran a series of pre-registered robustness checks on the main ZOIB model, with each producing the same pattern of results (reported in full in the SM). The first check was on participants who saw the explanation of the label. Only participants who clicked on a product that featured an eco-label (i.e., any A/B product in the binary label condition and any product in the eco-score condition) saw a detailed description of the eco-label. Including control participants and only those in the treatment groups who saw this explanation ($n_{\text{Binary}} = 87$, $n_{\text{Eco-score}} = 178$) shows much stronger effects of both labels. The second check was on label recall. Including only participants who correctly identified their assigned eco-label (i.e., no label for control participants, the binary label and the eco-score for participants in the treatment conditions, respectively; $n_{\text{Control}} = 335$, $n_{\text{Binary}} = 286$, $n_{\text{Eco-score}} = 129$) similarly strengthens the observed effects.

The third check was on participants who identified the purpose of the study, to provide a test for the influence of experimenter demand on responses (Zizzo, 2010). Excluding participants who referred to the environment or sustainability when asked about the purpose of the study immediately after using the shop ($n_{\text{C}} = 0$, $n_{\text{EL}} = 140$, $n_{\text{ES}} = 48$) slightly weakens the effects, with the effect of the binary label becoming non-significant, but the effects of the eco-score on "some A/B" and "all A/B" purchases remain statistically significant. The same effects are also observed excluding as pre-registered participants who straightlined rating scale questions ($n = 28$) and those who spent less than 30 seconds on the shop ($n = 31$; see the SM).

As an additional exploratory check, we included in the main model controls for brand familiarity. Each participant saw a randomly selected set of seven brands and were asked which, if any, they had heard of before taking part in the study. Results (reported in detail in the SM) show that participants were least familiar with A- and B-rated brands (5.1% and 5.0%, respectively). They were also mostly unfamiliar with the C- and E-rated brands (9.3% and 14.9%, respectively). They were most familiar with the D-rated brands (40.9%). We generated two scores for each participant: one for the proportion of A- and B-rated brands they were familiar with from the ones they were shown, and one for the proportion of C-, D- and E-rated brands. The eco-label effects hold when these scores were included as controls in the main ZOIB model (see SM).

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to environmental impact ($M = 3.86$, $SD = 1.87$), brand ($M = 3.84$, $SD = 1.80$) and ethical production ($M = 3.79$, $SD = 1.88$). Perhaps interestingly, there was no evidence for a difference between attention paid to brand and environmental impact (t (1199) = 0.99, $p = .322$).

3.2 Do the effect of eco-labels differ by subgroups?

To explore potential differences in the effects of the eco-labels among subgroups of participants, we ran repeated separate ZOIB models each with an interaction term between condition and the (pre-registered) characteristic of interest: gender, age, clothing-impact concern, shopping frequency. Given the exploratory nature of these tests, we present here only the marginal effects from the interaction terms and interpret effects with caution (Figure 4). Full models are available in the SM.

Turning first to gender, the control point estimates show small differences between men and women, with women appearing more likely to have bought no As or Bs and men more likely to have selected all As and Bs. We cannot be certain whether this difference is an artefact of the clothing available in this study or if it is a result of differences in the appeal of non-sustainable clothes in the market. However, the eco-labels appear to have eliminated these differences. Thus, the effect of the eco-score label may be stronger for women than men, although the differential we observed is due to women choosing more unsustainable products in the absence of labels.

A potential age interaction is observed on the likelihood of buying no A or B purchases, with the youngest age group least likely to have chosen no A or B products when the eco-score was shown. However, the marginal effects from the eco-score on each age group appear consistent on purchasing some A/B products and all A/B products.

A more robust interaction is observed between the eco-labels and self-reported concern about the environmental impact of clothing. Participants rated their similarity to a hypothetical individual who demonstrated high levels of environmental concern (e.g., they buy clothes infrequently and tries to buy second-hand, always looks for recycled or biodegradable material with low-impact dyes and regularly recycles old clothes). Participants used the full extent of the 7-point scale, but with a slight skew towards the lower end (M = 3.3, SD = 1.75). To test the interaction effect, we used a tertiary split on the scale, comparing those with low concern (a 1 or 2, n = 457) to those with moderate concern (a 3 or 4, n = 429) and those with relatively high concern (above 4, n = 314). Figure 4 suggests that the effect of the eco-score label in particular is moderated by environmental concern, with those highest in concern least likely to have chosen no A/Bs and more likely to have chosen more A/Bs or all A/Bs when the eco-score was visible compared to those with moderate and low concern. Differences between these

groups were smaller in the basic eco-label condition and almost non-existent in the control condition. A similar effect was observed using general worry about climate change in place of concern specifically about the environmental impact of clothes production (SM).

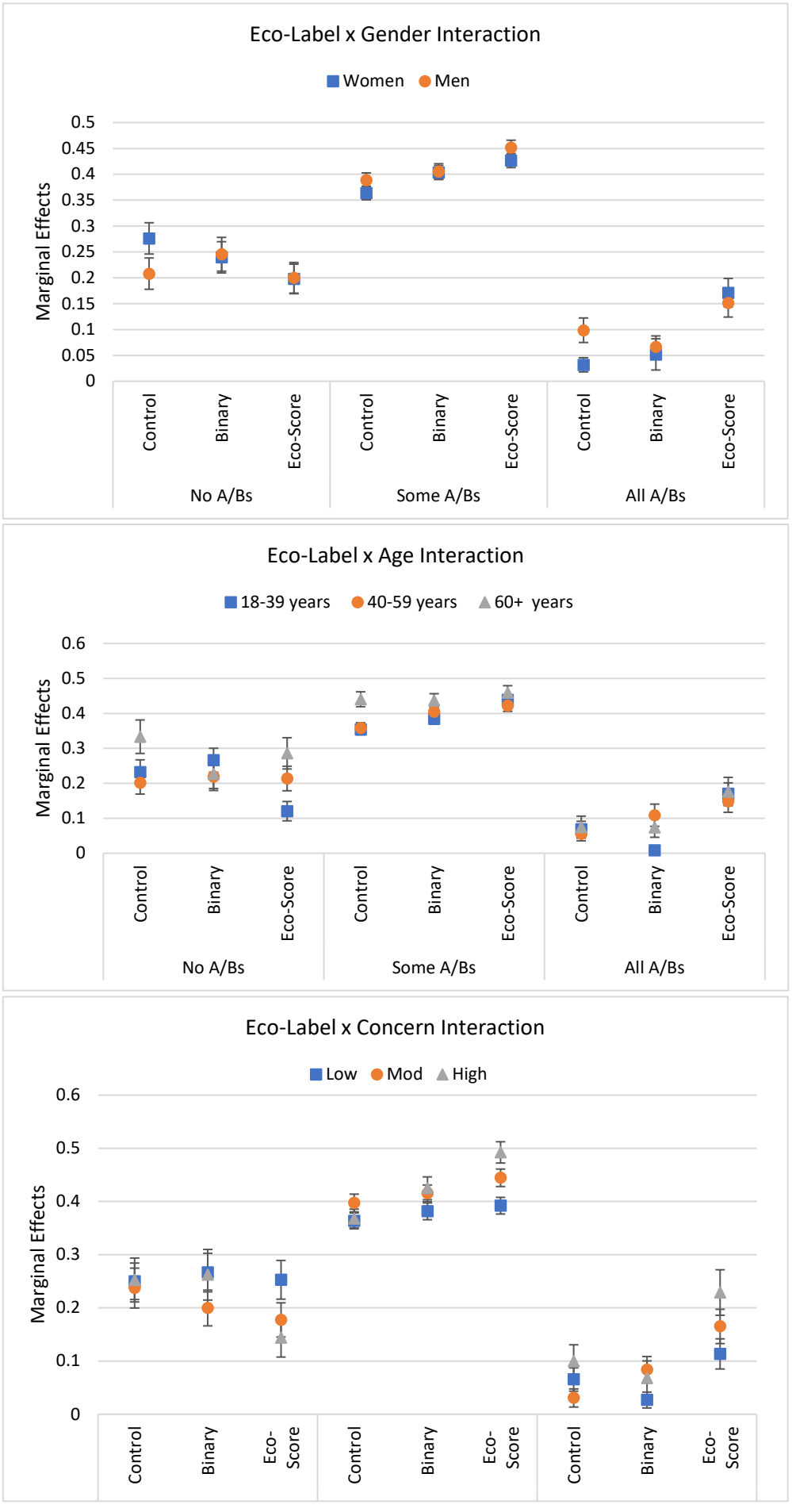

Figure 6. Interaction effects between eco-labels and gender (top), age (middle) and concern about the environmental impact of clothes production (bottom). Error bars show the standard error.

Our final pre-registered interaction of interest was on shopping frequency (reported in detail in SM). We classified 'high frequency' shoppers using a scoring system previously employed in a study commissioned by the Environmental Protection Agency about textile consumption,[7] as pre-registered. For both on-line and in-store shopping, participants received a score of 100 if they responded that they do so 'several times a week,' a score of 80 if they do so 'about once a week,' 60 if they do so 'a few times a month,' 40 for 'once a month,' 20 for 'once every few months,' 10 for 'once or twice per year' and 5 for 'less than once a year.' Participants who received a combined score of above 100 (14.2% of the sample) were classified as 'high frequency' shoppers. This represents a substantial drop in the number of high frequency shoppers than during the EPA's previous survey (21%), which was likely inflated due the survey running during the COVID-19 pandemic. The reduced sample size of high frequency shoppers precluded any reliable interaction tests. Instead, we report in the SM an alternative measure using estimated yearly shopping spend. The model shows no interaction, implying that the eco-labels function similarly on those who spend the most on clothes per year as on other consumers.

3.3 Do eco-labels alter how many clothing items are purchased?

Our second pre-registered hypothesis was that eco-labels could influence the number of products purchased, potentially leading to reduced purchases through heightened awareness of the environmental impact of clothing or more purchases through moral licensing from buying more sustainable clothes. Participants bought 5.89 (*SD* = 3.86) items on average. spending €190.45 (*SD* = €123.66, *Mdn* = €177.14; see the SM for details).[8] A Poisson regression model predicting the number of purchased products using the same controls as in Table 2 is presented in Model 1 in Table 3.[9] The model shows no effect of either label compared to the control condition and a Wald test of coefficients showed no difference

[7] https://www.epa.ie/publications/circular-economy/resources/national-textiles-survey-2021-purchasing-of-clothes-part-1-of-5.php

[8] Interestingly, participants appeared to reach a ceiling spend at around €230, despite half the sample having a budget above €360. Just 10% of participants spent 90% or more of their endowed budget. We attribute this to instructions to choose only items participants themselves would be interested in wearing.

[9] An exploratory model with environmental concern added showed that those more concerned about the environmental impact of clothing actually purchased significantly more items, with marginal effects showing that those most concerned bought 6.2 items on average compared to those with moderate and low concern buying 5.8. They also spent more of their budget (65% vs. 57% among those with moderate and low concern). There was no interaction between condition and concern.

between the labels ($\chi^2 = 0.07$, $p = .789$). Model 2 shows a beta regression predicting the proportion of budget spent. The model shows a marginally significant effect of the eco-score label increasing the proportion of budget spent, perhaps attributable to the small albeit non-significant association between sustainability and price.

Table 3. Regression Models Predicting Number of Items Purchased and Share of Budget Spent

	(1) Number of Products	(2) Proportion Budget Spend
Eco-Label		
(Ref: No Label)		
Binary	-0.02	0.03
	[-0.07, 0.04]	[-0.14, 0.20]
	$p = .606$	$p = .754$
Eco-Score	-0.01	0.16
	[-0.06, 0.05]	[-0.01, 0.32]
	$p = .798$	$p = .060$
Budget	0.10***	-0.22***
	[0.08, 0.12]	[-0.29, -0.16]
	$p < .001$	$p < .001$
Man	-0.03	-0.02
(Ref: Woman)	[-0.08, 0.01]	[-0.15, 0.12]
	$p = .157$	$p = .823$
Age		
(Ref: 18-39 years)		
40-59 years	-0.06*	-0.05
	[-0.11, -0.00]	[-0.21, 0.12]
	$p = .046$	$p = .586$
60+ years	-0.21***	-0.28**
	[-0.28, -0.15]	[-0.46, -0.10]
	$p < .001$	$p = .002$
Degree	-0.00	0.11
(Ref: Below degree)	[-0.05, 0.05]	[-0.04, 0.26]
	$p = .996$	$p = .153$
Urban	0.00	0.01
(Ref: Rural)	[-0.05, 0.05]	[-0.14, 0.15]
	$p = .873$	$p = .941$
ABC1 Social Grade	-0.00	0.01
(Ref: C2DEF)	[-0.05, 0.05]	[-0.14, 0.16]
	$p = .906$	$p = .911$
Constant	1.49***	1.13***
	[1.39, 1.60]	[0.82, 1.43]
	$p < .001$	$p < .001$
Observations	1,200	1,200

*** p<0.001, ** p<0.01, * p<0.05
95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes.

3.4 Other Measures

We also pre-registered our interest in the effects of eco-labels on participant satisfaction with their shopping experience, likelihood of wearing the clothes they selected, perceived impact of clothes production on the environment and support for mandating the application of clothing eco-labels.

3.4.1 Do eco-labels alter shopping experiences?

Participants reported being highly satisfied with their shopping experience and that the shop was very easy to use ($M = 5.6$, $SD = 1.43$, out of 7; $M = 6.5$, $SD = 1.00$ out of 7, respectively). Before testing for the effects of eco-labels on shopping satisfaction, we combined responses below the mid-point into one group due to low cell sizes (14% of the sample responded below 4). Table 4 reports an ordered logistic regression model on this five-category outcome variable with the same controls as the above models. Model 1 shows no evidence that the eco-labels reduced satisfaction with the shopping experience. (Any positive effects are hampered by ceiling effects, as most control participant responses were towards the positive end of the scale.) Raw scores give the same result, but the Brant test for proportional odds on the model fails. Similarly, we combined responses at 4 or below for shopping easy (5.8% of the sample) and Model 2 shows no evidence that the eco-labels made the shop less easy to use.

Table 4. Ordered Logistic Regression Models on Other Measures

	(1)	(2)	(3)	(4)
VARIABLES	Satisfaction	Ease	Will Wear	Production Impact
Eco-Label (Ref: No Label)				
Binary	-0.15	-0.17	-0.19	0.05
	[-0.41, 0.10]	[-0.46, 0.13]	[-0.48, 0.10]	[-0.20, 0.31]
	$p = .245$	$p = .276$	$p = .194$	$p = .674$
Eco-Score	0.09	0.05	-0.19	0.07
	[-0.15, 0.34]	[-0.25, 0.34]	[-0.47, 0.08]	[-0.17, 0.32]
	$p = .458$	$p = .757$	$p = .172$	$p = .557$
Budget	-0.03	0.03	-0.00	-0.02

	[-0.13, 0.07]	[-0.09, 0.14]	[-0.11, 0.11]	[-0.12, 0.07]
	p = .521	p = .648	p = .974	p = .620
Man	-0.14	-0.55***	-0.13	0.25*
(Ref: Woman)	[-0.35, 0.07]	[-0.80, -0.31]	[-0.36, 0.11]	[0.04, 0.46]
	p = .190	p < .001	p = .285	p = .019
Age				
(Ref: 18-39 years)				
40-59 years	0.02	0.15	0.40**	0.09
	[-0.23, 0.27]	[-0.14, 0.45]	[0.13, 0.67]	[-0.16, 0.34]
	p = .880	p = .308	p = .004	p = .497
60+ years	0.13	0.08	0.51***	0.02
	[-0.14, 0.40]	[-0.24, 0.39]	[0.21, 0.81]	[-0.24, 0.29]
	p = .333	p = .631	p = .001	p = .863
Degree	-0.27*	-0.34*	-0.29*	-0.22
(Ref: Below Degree)	[-0.49, -0.04]	[-0.61, -0.08]	[-0.54, -0.04]	[-0.44, 0.01]
	p = .019	p = .012	p = .024	p = .057
Urban	-0.10	-0.08	-0.21	-0.06
(Ref: Rural)	[-0.31, 0.12]	[-0.34, 0.18]	[-0.45, 0.03]	[-0.27, 0.16]
	p = .369	p = .543	p = .089	p = .590
ABC1 Social Grade	-0.24*	-0.11	-0.00	-0.02
(Ref: C2DEF)	[-0.47, -0.02]	[-0.38, 0.15]	[-0.26, 0.25]	[-0.24, 0.21]
	p = .034	p = .399	p = .980	p = .886
/cut1	-2.96***	-3.26***	-2.56***	-1.81***
	[-3.46, -2.45]	[-3.86, -2.67]	[-3.10, -2.01]	[-2.28, -1.34]
	p < .001	p < .001	p < .001	p < .001
/cut2	-1.94***	-2.39***	-1.73***	-0.48*
	[-2.42, -1.46]	[-2.96, -1.83]	[-2.25, -1.20]	[-0.94, -0.03]
	p < .001	p < .001	p < .001	p = .038
/cut3	-0.81***	-1.20***	-0.70**	0.77***
	[-1.28, -0.34]	[-1.75, -0.65]	[-1.21, -0.18]	[0.31, 1.23]
	p = .001	p < .001	p = .008	p = .001
/cut4	0.16			
	[-0.30, 0.63]			
	p = .494			
Observations	1,200	1,200	1,200	1,200

*** p<0.001, ** p<0.01, * p<0.05
95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes.

Participants also reported very high levels of willingness to wear the clothes they purchased in the online shop (M = 6.3, SD = 1.23, out of 7). For modelling, we combined responses below 5 (9% at 4 and 7.8% below), again using an ordered logistic regression. Results (Model 3 in Table 4) show no negative effect of the labels on willingness to wear clothing purchased. Again, raw scores give the same result, but the Brant test for proportional odds on the model fails.

3.4.2 Do eco-labels alter the perceived environmental impact of clothes production?

We measured perceived impact of clothing production in two ways. The first was via a ranking task, in which participants ordered the global greenhouse emissions from four sectors (food production, clothes production, waste, and aviation and shipping). Results showed that participants performed poorly in this task, with most underestimating emissions impact of food production (84.3%) and clothes production (61.5%) and many overestimating emissions from waste (48.2%) and aviation and shipping (88.1%). An ordered logistic regression on the rank assigned to clothes production further shows no effect of the eco-labels (Model 4 in Table 4).

The second way was a task in which participants estimated the eco-score of 10 brands available for purchase on the high street in Ireland. Again, performance on the task was poor; the average number of correct responses is significantly worse than chance (M = 1.8, SD = 1.32; t (1199) = -4.46, $p < .001$). The response pattern showed somewhat of a central tendency bias, with more participants guessing correctly the 'C'-rated brands than 'A's and 'E's (Figure 6; all ps < .001 on tests of proportions). The response pattern also shows a greater tendency to have overestimated rather than underestimated the sustainability of brands. Approximately 70% of participants overestimated the sustainability of the E-rated brands, compared to 56% of participants who underestimated the sustainability of A-rated brands (ps < .001). Similarly, approximately 60% overestimated the sustainability of D brands compared to around 35% who underestimated B brands (ps < .001). C brands were also more likely to be overestimated than underestimated (ps < .001). Participants were most uncertain about the A- and B-rated brands, perhaps signalling lower familiarity with the most sustainable companies, despite efforts to include brands available on the high street.

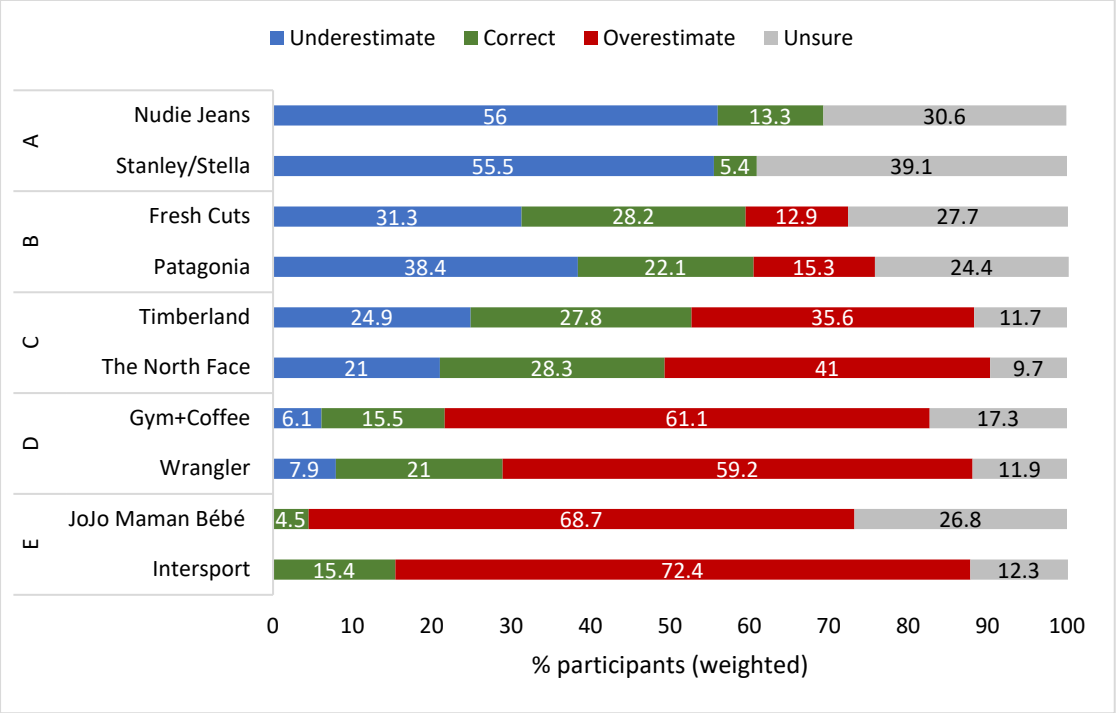

Figure 7. Responses to emissions ranking task. Responses are weighted by age, gender and educational attainment.

3.4.3 How supportive are consumers of eco-labels?

Participants reported very high levels of support for mandating eco-labels for both online (M = 5.55, SD = 1.68, out of 7) and in-store (M = 5.57, SD = 1.67) purchases. Figure 7 shows that 75% of participants responded above the mid-point of the scale. Both measures had very high consistency (Cronbach's α = .97) and so we combined them for modelling purposes. An OLS regression on this support measure shows no effect of eco-label condition (Table 5). In terms of socio-demographic predictors of support, marginal effects from the model show that women were more supportive than men (M = 5.72, SE = 0.07 vs. M = 5.40, SE = 0.07) and those educated to degree level were more supportive than those educated below degree (M = 5.72, SE = 0.07 vs. M = 5.45, SE = 0.07). Notably, however, all groups responded well above the mid-point of the scale on average.

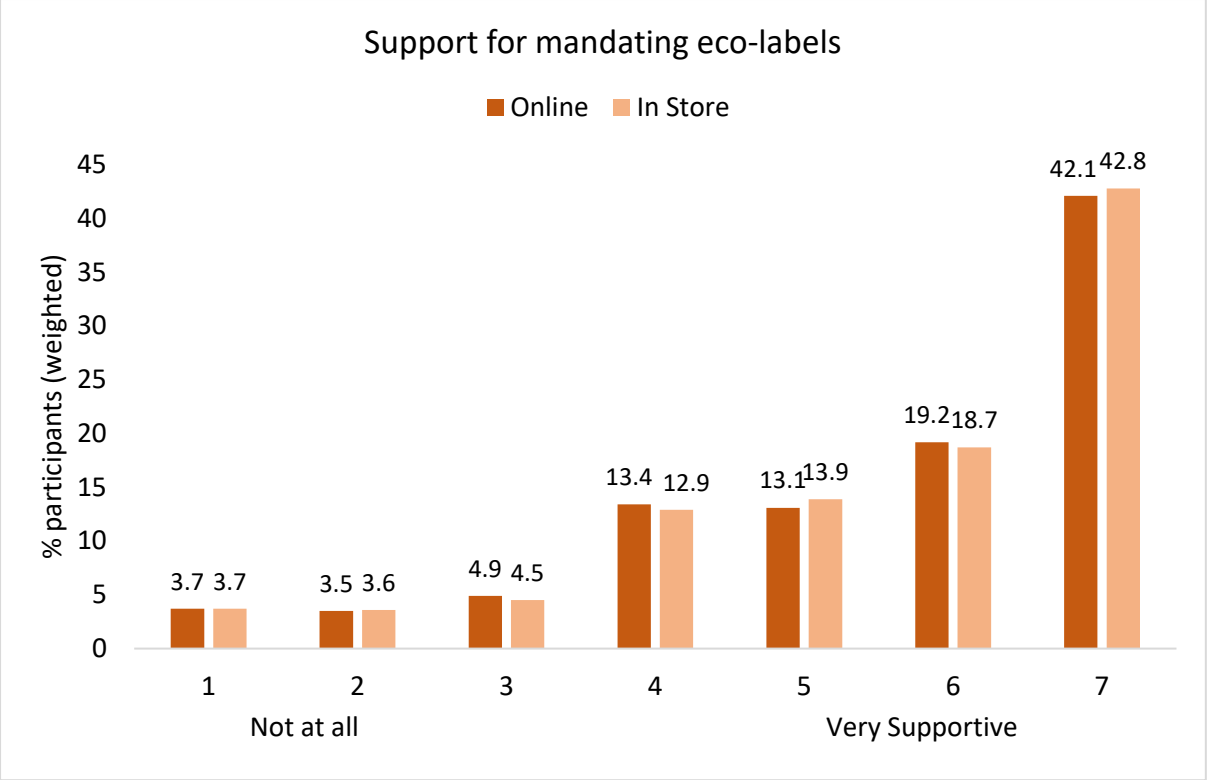

Figure 8. Support for mandating eco-labels on clothing sold online and in store. Responses are weighted by age, gender and educational attainment.

Table 5. OLS Regression Predicting Policy Support

	(1) Policy Support
Eco-Label	
(Ref: No Label)	
Binary	0.04
	[-0.19, 0.27]
	p = .731
Eco-Score	0.13
	[-0.09, 0.36]
	p =.240
	[-0.07, 0.10]
	0.706
Man	-0.32***
(Ref: Woman)	[-0.51, -0.13]
	p = .001
Age	
(Ref: 18-39 years)	
40-59 years	-0.13
	[-0.35, 0.09]
	p = .252
60+ years	0.13
	[-0.11, 0.37]
	p = .278
Degree	0.26*

(Ref: Below Degree)	[0.06, 0.46]
	p = .011
Urban	0.17
(Ref: Rural)	[-0.02, 0.37]
	p = .080
ABC1 Social Grade	0.14
(Ref: C2DEF)	[-0.06, 0.34]
	p = .175
Constant	5.32***
	[4.91, 5.73]
	p < .001
Observations	1,200

*** p<0.001, ** p<0.01, * p<0.05

95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes.

4. Discussion

Our aim was to test the effects of two eco-labelling systems on clothes purchase decisions. Results show that both systems increased the proportion of sustainable clothes purchased, supporting H1a. However, we observed significant differences in the effectiveness of each system, as anticipated by H1b. Our statistical model allowed us to identify the nature of these differences. For participants exposed to the binary system, which reflects current policy, purchases of sustainable clothing (i.e., the A- and B-rated products) increased by 10%. This effect size is consistent with a field experiment test of a binary system (Feuß et al., 2022). There was no evidence for a reduction in the number of consumers who exclusively purchased environmental harmful clothes nor an increase in those who exclusively purchased sustainable clothes. In contrast, the graded eco-score system, adapted from the French Nutriscore model used for food labelling, showed much larger effects. Sustainable purchases increased by 20%, and the number of consumers who exclusively bought from the most sustainable brands more than doubled compared to the control condition.

These results are robust to multiple checks, including excluding participants who suspected the study's focus was on the environmental impact of clothing. These checks also shed light on the potential mechanism driving the effectiveness of the eco-score. Participants paid more attention to environmental information when presented with the color-coded, graded system, and were more likely to accurately recall the label, further supporting the salience theory of eco-labelling effects (e.g., Meis-Harris, Eyssel & Kashima, 2021; Thøgersen, 2000).

Our pre-registered, exploratory moderation analyses replicated findings from eco-label experiments in other domains. For instance, the effect of the eco-score was more pronounced among participants who expressed greater concern about the environmental impact of clothing (Majer et al., 2022). This finding, while intuitive, supports the policy argument for introducing a graded labelling system. Currently, a substantial cohort of consumers have strong environmental preferences but are unable to act on these preferences due to the lack of transparency regarding the environmental impact of clothing. A salient labelling system would enable these consumers to choose more sustainable brands, thereby fostering stronger competition between sustainable firms and those that depend on low-cost labour and more polluting fabrics (Bick et al., 2018; Peters et al., 2021).

Exploratory results provide suggestive evidence for stronger eco-label effects among women and young people (Majer et al., 2022). However, these effects appear to arise because both groups were less likely to choose sustainable products in the control condition, with the eco-score functioning to correct this negative difference. This pattern may suggest there are aesthetic or brand loyalty preferences among these consumers that, in the absence of clear environmental information, lead to less sustainable choices. Again, the eco-score system appears to assist these consumers in making more informed decisions in line with their broader environmental preferences. Encouragingly, the analysis on shopping frequency shows that the eco-score had similar effects on high frequency shoppers. As noted, however, these moderation analyses were exploratory and thus warrant further confirmatory testing.

Despite the positive effects of the eco-score system on the sustainability of purchased clothing, we observed no effect on the number of purchased items (H2). The environmental impact of clothing results from both production processes and the volume of production. Our findings suggest that eco-labelling may only be an effective policy instrument for influencing the former. This is perhaps unsurprising, since consumers are likely to have already decided they want or need to buy clothing when they reach the point at which they see the labels. Interventions that target existing norms for clothing consumption may be more effective (Niinimäki, 2010). However, there is a positive implication for policy here: we found no evidence for moral licensing. Consumers did not purchase additional clothing because of the increased certainty that their purchases were from more sustainable brands (even though many participants had remaining budget). There is also a positive implication for industry. We found no evidence that consumers buy fewer clothes in markets with widespread eco-labels, only that they shift towards more sustainable products.

Additional support for implementing a graded eco-labelling system for clothing comes from the other measures recorded in our study. Our findings highlight significant information gaps in consumer perceptions of the environmental impact of clothing production. Most participants underestimated the contribution of the clothing industry to greenhouse gas emissions and tended to overestimate the sustainability of familiar brands. Moreover, despite a shift towards more sustainable brands, seeing the environmental impact of clothing at the point of sale did not reduce consumer satisfaction with their shopping experience, nor did they buy clothing they liked less as a result. Consumers expressed strong support for mandating eco-labels, both for online purchases as tested here and in-store. Of course, we do not provide evidence here on the

optimal presentation format in-store, which would depend on specific regulation. For example, if the primary mechanism underlying eco-labels is salience (e.g., Meis-Harris et al., 2021), it would likely be more effective for eco-scores to be displayed on price tags rather than on on-clothing labels that contain laundry instructions. Further testing, however, would be beneficial.

4.2 Limitations and Future Research

Our primary interest was in testing whether eco-labels can shift consumers towards more sustainably produced clothing products. However, the environmental impact of clothing results from more than just how it is produced. Other interventions are likely required to reduce the volume of clothing purchased, particularly in high income countries, and to improve sustainable action at later stages of the clothing life cycle, including washing and care, turnover rates, and repair and recycling (Millward-Hopkins et al., 2023; Munasinghe, Druckman & Dissanayake, 2021; Sandin & Peters, 2018; Zhang, Leung, Boriskina & Tao, 2023).

Although our experiment used an incentive-compatible design, participants did not use their own money for shopping. This logistical necessity could have introduced a "house money" effect, where participants make different choices due to receiving "free" money (Clark, 2002). However, if a house money effect were present, we would expect most participants to maximise their spending, especially given the chance to receive their selected clothing and the highly positive ratings of their shopping experience and purchased items. Instructions specified to choose only products they were interested in owning and the average participant appeared to follow these, spending just half of their allocated budget. Only those given smaller budgets spent more than half on average. Participants appeared to hit a spending ceiling at around €230, spending approximately one-quarter of their typical annual spend in the online shop. Given that the modal shopping frequency was once every few months, this spending pattern aligns with what might be expected during a “typical” shopping episode. Furthermore, the effect size for the binary eco-label closely matches the effect size observed in Feuß et al.'s (2022) field experiment. Nonetheless, the strength of the eco-score effect suggests that replication in a similar field experiment is warranted.

A broader limitation is the availability of data with which to calculate the environmental impact of specific clothing products and thus implement a graded eco-labelling system for clothing (Niinimäki, Hernberg, Bhatnagar & Ghoreishi, 2024). On-going EU legislation (e.g., the

Digital Passport for textiles) means that such data will be more readily available in the near future, but a fair and trusted system for establishing grades will be necessary. Nonetheless, we believe it is unlikely that the effects we observed are specific to the underlying scoring system we employed.

4.3 Conclusion

Clothes production causes substantial greenhouse gas emissions and local environmental degradation. Consumer demand for fast fashion, particularly in high income countries, appears to contradict reported concern about climate change, but may be explained by the shrouded nature of environmental impact at point of purchase. Our evidence suggests that the current policy response – a host of voluntary, binary eco-labels – is inadequate. Instead, we find much stronger effects of graded eco-labels applied to an entire market, mirroring evidence for graded nutritional labels on food and environmental labels on electronics (Robertson et al., 2023; Thøgersen et al., 2024). Developing a robust scoring system is an obvious necessity for implementing such labels, but advances in life cycle analysis and legislation means the marginal cost of doing so is falling. Graded clothing eco-labels appear to enable consumers to make choices that better align with their preferences.

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Supplemental Material

Tables

Figures

Table S6. Alternative Regression Models on Proportion of A/B Purchases

	(1) Fractional Response	(2) Logit on A/Bs	(3) Logit on CDEs	(4) OLS
	.			
condition = 1, Eco-score	0.52***	0.39*	-0.68*	0.12***
	[0.35 - 0.70]	[0.05 - 0.74]	[-1.30 - -0.06]	[0.08 - 0.16]
	0.000	0.026	0.033	0.000
condition = 2, Binary	0.10	0.02	0.73	0.02
	[-0.07 - 0.27]	[-0.31 - 0.36]	[-0.14 - 1.60]	[-0.02 - 0.06]
	0.232	0.885	0.099	0.267
budget100	0.04	0.09	0.14	0.01
	[-0.02 - 0.11]	[-0.04 - 0.22]	[-0.12 - 0.39]	[-0.01 - 0.02]
	0.214	0.182	0.293	0.220
male = 1, Male	0.14	0.15	-0.01	0.03
	[-0.01 - 0.28]	[-0.13 - 0.44]	[-0.57 - 0.54]	[-0.00 - 0.06]
	0.059	0.288	0.959	0.058
male = 2, Other	1.11	-	-2.28	0.27
	[-0.03 - 2.25]		[-4.89 - 0.33]	[-0.05 - 0.59]
	0.056	-	0.087	0.104
age3 = 1, 40-59	0.06	0.08	0.07	0.01
	[-0.11 - 0.23]	[-0.27 - 0.43]	[-0.58 - 0.73]	[-0.02 - 0.05]
	0.468	0.646	0.828	0.469
age3 = 2, 60+	0.08	-0.31	0.07	0.02
	[-0.10 - 0.27]	[-0.67 - 0.04]	[-0.62 - 0.76]	[-0.02 - 0.06]
	0.375	0.080	0.841	0.364
degree = 1, Degree	0.18*	0.21	-0.32	0.04*
	[0.02 - 0.33]	[-0.10 - 0.51]	[-0.91 - 0.28]	[0.01 - 0.08]
	0.023	0.181	0.297	0.023
urbloc = 1, Urban	-0.09	-0.13	-0.17	-0.02
	[-0.24 - 0.05]	[-0.42 - 0.16]	[-0.75 - 0.41]	[-0.05 - 0.01]
	0.210	0.387	0.569	0.217
abc1 = 1, ABC1	0.03	0.03	-0.50	0.01
	[-0.12 - 0.18]	[-0.27 - 0.34]	[-1.11 - 0.10]	[-0.03 - 0.04]
	0.666	0.835	0.104	0.667
Constant	-1.08***	0.82**	3.19***	0.25***
	[-1.40 - -0.77]	[0.20 - 1.44]	[1.98 - 4.41]	[0.17 - 0.32]
	0.000	0.010	0.000	0.000
Observations	1,200	1,197	1,200	1,200

*** p<0.001, ** p<0.01, * p<0.05

95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes. All p-values are two tailed despite directional hypotheses.

Table S7. ZOIB Model with Budget Interaction

VARIABLES	(1) proportion	(2) oneinflate	(3) zeroinflate
condition = 1, Eco-score	0.07	-0.21	-0.35
	[-0.34 - 0.47]	[-2.08 - 1.65]	[-1.58 - 0.88]
	0.745	0.824	0.575
condition = 2, Binary	-0.08	-0.31	0.37
	[-0.50 - 0.34]	[-2.62 - 2.00]	[-0.83 - 1.57]
	0.704	0.791	0.547
budget100	-0.01	-0.24	-0.06
	[-0.09 - 0.06]	[-0.68 - 0.20]	[-0.29 - 0.16]
	0.756	0.280	0.577
0b.condition#co.budget100	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
1.condition#c.budget100	0.05	0.35	0.02
	[-0.05 - 0.16]	[-0.16 - 0.86]	[-0.31 - 0.35]
	0.333	0.175	0.914
2.condition#c.budget100	0.05	0.06	-0.11
	[-0.06 - 0.16]	[-0.59 - 0.70]	[-0.44 - 0.21]
	0.332	0.866	0.495
male = 1, Male	0.07	0.24	-0.13
	[-0.02 - 0.17]	[-0.21 - 0.68]	[-0.41 - 0.16]
	0.143	0.292	0.395
male = 2, Other	0.26	1.69	-11.29
	[-0.70 - 1.23]	[-0.87 - 4.25]	[-711.49 - 688.90]
	0.591	0.196	0.975
age3 = 1, 40-59	0.01	0.27	-0.06
	[-0.11 - 0.12]	[-0.26 - 0.80]	[-0.42 - 0.29]
	0.905	0.322	0.722
age3 = 2, 60+	0.21***	0.35	0.34
	[0.09 - 0.34]	[-0.22 - 0.91]	[-0.02 - 0.70]
	0.001	0.231	0.062
degree = 1, Degree	0.14**	0.04	-0.21
	[0.04 - 0.24]	[-0.44 - 0.51]	[-0.52 - 0.10]
	0.008	0.881	0.175
urbloc = 1, Urban	-0.06	-0.09	0.13
	[-0.16 - 0.04]	[-0.55 - 0.36]	[-0.17 - 0.42]
	0.242	0.686	0.405
abc1 = 1, ABC1	-0.00	0.16	-0.02
	[-0.11 - 0.10]	[-0.32 - 0.64]	[-0.33 - 0.29]
	0.964	0.519	0.891
Constant	-0.58***	-1.88*	-0.87*
	[-0.89 - -0.27]	[-3.42 - -0.34]	[-1.70 - -0.04]
	0.000	0.017	0.039
Observations	1,200	1,200	1,200

*** p<0.001, ** p<0.01, * p<0.05

95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes. All p-values are two tailed despite directional hypotheses.

Table S8. Ordered Logistic Regression Model on Attention Paid to Environmental Information

VARIABLES	(1) att_envQuantised	(2) att_envQuantised
condition = 1, Eco-score	1.09***	1.22***
	[0.84 - 1.34]	[0.96 - 1.48]
	0.000	0.000
condition = 2, Binary	0.48***	0.67***
	[0.23 - 0.73]	[0.40 - 0.93]
	0.000	0.000
budget100	-0.04	-0.05
	[-0.13 - 0.06]	[-0.14 - 0.05]
	0.458	0.356
male = 1, Male	-0.29**	-0.01
	[-0.50 - -0.09]	[-0.23 - 0.20]
	0.005	0.901
male = 2, Other	0.46	-0.68
	[-1.74 - 2.66]	[-2.78 - 1.41]
	0.682	0.522
age3 = 1, 40-59	-0.28*	-0.25
	[-0.53 - -0.04]	[-0.50 - 0.01]
	0.024	0.057
age3 = 2, 60+	-0.10	-0.26
	[-0.36 - 0.16]	[-0.53 - 0.01]
	0.451	0.057
degree = 1, Degree	0.46***	0.31**
	[0.24 - 0.68]	[0.08 - 0.54]
	0.000	0.007
urbloc = 1, Urban	-0.00	-0.12
	[-0.21 - 0.21]	[-0.34 - 0.10]
	0.988	0.277
abc1 = 1, ABC1	-0.14	-0.07
	[-0.36 - 0.08]	[-0.30 - 0.15]
	0.220	0.527
pref_env Quantised		0.72***
		[0.65 - 0.79]
		0.000
/cut1	-0.66**	1.88***
	[-1.11 - -0.20]	[1.35 - 2.41]
	0.004	0.000
/cut2	-0.08	2.64***
	[-0.53 - 0.37]	[2.09 - 3.18]
	0.727	0.000
/cut3	0.39	3.28***
	[-0.06 - 0.84]	[2.72 - 3.83]
	0.089	0.000
/cut4	1.03***	4.12***
	[0.57 - 1.48]	[3.55 - 4.69]
	0.000	0.000
/cut5	1.96***	5.29***
	[1.50 - 2.43]	[4.70 - 5.89]
	0.000	0.000
/cut6	2.77***	6.27***

	[2.29 - 3.26]	[5.64 - 6.89]
	0.000	0.000
Observations	1,200	1,200

*** p<0.001, ** p<0.01, * p<0.05

95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes. All p-values are two tailed despite directional hypotheses.

Table S9. ZOIB Regression Model on Participants who Saw Eco-label Description

VARIABLES	(1) proportion	(2) oneinflate	(3) zeroinflate
condition = 1, Eco-score	0.30***	0.98**	-0.35
	[0.15 - 0.44]	[0.34 - 1.63]	[-0.82 - 0.12]
	0.000	0.003	0.141
condition = 2, Binary	0.41***	-0.03	-1.19**
	[0.23 - 0.58]	[-1.05 - 1.00]	[-1.96 - -0.41]
	0.000	0.959	0.003
budget100	0.01		
	[-0.05 - 0.07]		
	0.830		
male = 1, Male	0.09	0.09	-0.39
	[-0.03 - 0.22]	[-0.53 - 0.72]	[-0.80 - 0.02]
	0.141	0.769	0.062
male = 2, Other	0.82	-10.81	-11.63
	[-0.53 - 2.17]	[-1,960.56 - 1,938.95]	[-1,247.36 - 1,224.11]
	0.236	0.991	0.985
age3 = 1, 40-59	0.02	0.47	0.15
	[-0.13 - 0.16]	[-0.26 - 1.19]	[-0.33 - 0.63]
	0.821	0.205	0.544
age3 = 2, 60+	0.26**	0.33	0.53*
	[0.10 - 0.43]	[-0.50 - 1.15]	[0.02 - 1.04]
	0.002	0.436	0.041
degree = 1, Degree	0.13	0.22	-0.18
	[-0.00 - 0.26]	[-0.43 - 0.86]	[-0.60 - 0.24]
	0.050	0.509	0.404
urbloc = 1, Urban	-0.02	0.23	0.31
	[-0.15 - 0.10]	[-0.41 - 0.87]	[-0.10 - 0.72]
	0.710	0.478	0.137
abc1 = 1, ABC1	0.03	0.04	0.30
	[-0.10 - 0.17]	[-0.62 - 0.69]	[-0.12 - 0.72]
	0.610	0.916	0.161
Constant	-0.71***	-3.25***	-1.38***
	[-0.97 - -0.45]	[-4.16 - -2.34]	[-1.93 - -0.84]
	0.000	0.000	0.000
Observations	669	669	669

*** p<0.001, ** p<0.01, * p<0.05

95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes. All p-values are two tailed despite directional hypotheses.

Table S10. ZOIB Regression Model on Participants who Recalled Correct Label

VARIABLES	(1) proportion	(2) oneinflate	(3) zeroinflate
condition = 1, Eco-score	0.25***	0.93**	-0.64**
	[0.12 - 0.38]	[0.33 - 1.53]	[-1.07 - -0.20]
	0.000	0.002	0.004
condition = 2, Binary	0.21*	-0.03	-0.57*
	[0.04 - 0.37]	[-0.94 - 0.89]	[-1.13 - -0.01]
	0.014	0.951	0.047
budget100	0.05	0.04	-0.00
	[-0.01 - 0.10]	[-0.21 - 0.29]	[-0.19 - 0.18]
	0.096	0.754	0.963
male = 1, Male	0.08	0.36	-0.17
	[-0.04 - 0.20]	[-0.18 - 0.90]	[-0.57 - 0.22]
	0.215	0.192	0.387
male = 2, Other	0.77	2.41	-12.40
	[-0.62 - 2.15]	[-0.59 - 5.40]	[-1,876.40 - 1,851.59]
	0.277	0.116	0.990
age3 = 1, 40-59	-0.09	0.35	0.04
	[-0.23 - 0.06]	[-0.29 - 0.99]	[-0.43 - 0.51]
	0.236	0.281	0.871
age3 = 2, 60+	0.22**	0.36	0.33
	[0.07 - 0.38]	[-0.35 - 1.07]	[-0.16 - 0.82]
	0.006	0.323	0.189
degree = 1, Degree	0.11	0.12	-0.29
	[-0.02 - 0.24]	[-0.46 - 0.69]	[-0.70 - 0.12]
	0.089	0.692	0.168
urbloc = 1, Urban	-0.04	0.06	0.14
	[-0.17 - 0.08]	[-0.50 - 0.62]	[-0.26 - 0.54]
	0.492	0.831	0.485
abc1 = 1, ABC1	0.01	-0.15	0.09
	[-0.13 - 0.14]	[-0.76 - 0.45]	[-0.33 - 0.52]
	0.912	0.613	0.664
Constant	-0.75***	-3.05***	-1.12***
	[-1.01 - -0.49]	[-3.87 - -2.23]	[-1.64 - -0.59]
	0.000	0.000	0.000
Observations	750	750	750

in brackets

*** p<0.001, ** p<0.01, * p<0.05

95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes. All p-values are two tailed despite directional hypotheses.

Table S11. ZOIB Regression Model Excluding Participants who Suspected Purpose

VARIABLES	(1) proportion	(2) oneinflate	(3) zeroinflate
condition = 1, Eco-score	0.15*	0.61	-0.12
	[0.02 - 0.27]	[-0.00 - 1.23]	[-0.50 - 0.26]
	0.019	0.052	0.543
condition = 2, Binary	0.08	-0.04	0.07
	[-0.04 - 0.20]	[-0.73 - 0.65]	[-0.27 - 0.42]
	0.195	0.911	0.678
budget100	0.02	-0.06	-0.10
	[-0.03 - 0.07]	[-0.31 - 0.18]	[-0.24 - 0.04]
	0.428	0.616	0.179
male = 1, Male	0.09	0.23	-0.17
	[-0.01 - 0.19]	[-0.30 - 0.76]	[-0.47 - 0.13]
	0.087	0.395	0.269
male = 2, Other	0.32	-11.51	-12.21
	[-0.60 - 1.24]	[-1,907.67 - 1,884.65]	[-1,066.01 - 1,041.59]
	0.494	0.991	0.982
age3 = 1, 40-59	0.03	0.18	-0.03
	[-0.09 - 0.15]	[-0.46 - 0.83]	[-0.40 - 0.34]
	0.611	0.574	0.880
age3 = 2, 60+	0.28***	0.12	0.32
	[0.15 - 0.41]	[-0.56 - 0.80]	[-0.05 - 0.70]
	0.000	0.725	0.092
degree = 1, Degree	0.12*	-0.00	-0.11
	[0.02 - 0.23]	[-0.57 - 0.56]	[-0.44 - 0.21]
	0.022	0.995	0.489
urbloc = 1, Urban	-0.05	0.15	0.04
	[-0.16 - 0.05]	[-0.42 - 0.73]	[-0.28 - 0.35]
	0.315	0.600	0.813
abc1 = 1, ABC1	-0.02	0.33	-0.01
	[-0.13 - 0.08]	[-0.25 - 0.90]	[-0.33 - 0.31]
	0.660	0.264	0.950
Constant	-0.72***	-2.90***	-0.74*
	[-0.94 - -0.50]	[-4.08 - -1.72]	[-1.39 - -0.08]
	0.000	0.000	0.027
Observations	1,012	1,012	1,012

in brackets

*** p<0.001, ** p<0.01, * p<0.05

95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes. All p-values are two tailed despite directional hypotheses.

Table S12. ZOIB Regression Excluding Straightliners

VARIABLES	(1) proportion	(2) oneinflate	(3) zeroinflate
condition = 1, Eco-score	0.25***	1.02***	-0.27
	[0.14 - 0.37]	[0.47 - 1.56]	[-0.62 - 0.09]
	0.000	0.000	0.137
condition = 2, Binary	0.13*	-0.12	-0.03
	[0.01 - 0.25]	[-0.79 - 0.55]	[-0.37 - 0.32]
	0.032	0.725	0.883
budget100	0.02	-0.05	-0.09
	[-0.03 - 0.06]	[-0.25 - 0.16]	[-0.22 - 0.05]
	0.417	0.657	0.200
male = 1, Male	0.06	0.30	-0.14
	[-0.03 - 0.16]	[-0.15 - 0.75]	[-0.43 - 0.16]
	0.209	0.185	0.363
male = 2, Other	0.25	1.78	-11.26
	[-0.71 - 1.21]	[-0.75 - 4.32]	[-713.15 - 690.64]
	0.608	0.168	0.975
age3 = 1, 40-59	0.01	0.20	-0.06
	[-0.11 - 0.12]	[-0.33 - 0.73]	[-0.42 - 0.30]
	0.914	0.456	0.761
age3 = 2, 60+	0.22***	0.26	0.37*
	[0.10 - 0.35]	[-0.31 - 0.84]	[0.01 - 0.74]
	0.000	0.368	0.042
degree = 1, Degree	0.14**	-0.02	-0.20
	[0.04 - 0.24]	[-0.50 - 0.46]	[-0.52 - 0.11]
	0.008	0.930	0.206
urbloc = 1, Urban	-0.07	-0.08	0.13
	[-0.16 - 0.03]	[-0.54 - 0.38]	[-0.17 - 0.43]
	0.193	0.742	0.405
abc1 = 1, ABC1	-0.02	0.21	0.00
	[-0.12 - 0.09]	[-0.27 - 0.69]	[-0.31 - 0.31]
	0.751	0.390	0.994
Constant	-0.69***	-2.83***	-0.81*
	[-0.90 - -0.47]	[-3.85 - -1.81]	[-1.45 - -0.18]
	0.000	0.000	0.012
Observations	1,172	1,172	1,172

in brackets

*** p<0.001, ** p<0.01, * p<0.05

95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes. All p-values are two tailed despite directional hypotheses.

Table S13. ZOIB Regression Model Excluding Shop RT Outliers

VARIABLES	(1) proportion	(2) oneinflate	(3) zeroinflate
condition = 1, Eco-score	0.26***	1.13***	-0.21
	[0.15 - 0.38]	[0.55 - 1.70]	[-0.57 - 0.15]
	0.000	0.000	0.245
condition = 2, Binary	0.12*	-0.09	0.04
	[0.01 - 0.24]	[-0.81 - 0.63]	[-0.31 - 0.39]
	0.041	0.810	0.826
budget100	0.02	0.00	-0.08
	[-0.02 - 0.07]	[-0.21 - 0.21]	[-0.22 - 0.06]
	0.285	0.998	0.260
male = 1, Male	0.07	0.11	-0.15
	[-0.02 - 0.17]	[-0.35 - 0.57]	[-0.45 - 0.14]
	0.127	0.642	0.316
male = 2, Other	0.26	1.88	-12.09
	[-0.70 - 1.23]	[-0.72 - 4.47]	[-1,117.80 - 1,093.63]
	0.597	0.156	0.983
age3 = 1, 40-59	0.00	0.31	0.00
	[-0.11 - 0.12]	[-0.25 - 0.87]	[-0.36 - 0.37]
	0.998	0.277	0.994
age3 = 2, 60+	0.21***	0.43	0.43*
	[0.09 - 0.34]	[-0.16 - 1.02]	[0.07 - 0.80]
	0.001	0.149	0.020
degree = 1, Degree	0.14**	-0.02	-0.14
	[0.03 - 0.24]	[-0.51 - 0.47]	[-0.46 - 0.18]
	0.010	0.944	0.380
urbloc = 1, Urban	-0.06	0.01	0.11
	[-0.16 - 0.04]	[-0.47 - 0.49]	[-0.19 - 0.42]
	0.237	0.961	0.465
abc1 = 1, ABC1	-0.01	0.13	-0.02
	[-0.11 - 0.10]	[-0.37 - 0.63]	[-0.34 - 0.30]
	0.878	0.604	0.901
Constant	-0.71***	-3.18***	-0.98**
	[-0.92 - -0.50]	[-4.25 - -2.11]	[-1.62 - -0.33]
	0.000	0.000	0.003
Observations	1,169	1,169	1,169

in brackets

*** p<0.001, ** p<0.01, * p<0.05

95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes. All p-values are two tailed despite directional hypotheses.

Brand Familiarity

Participants were shown a list of seven randomly selected brands from the online shop and asked which they had heard of previously. Figure S1 shows the responses to these questions, using a base of participants who were shown each brand.

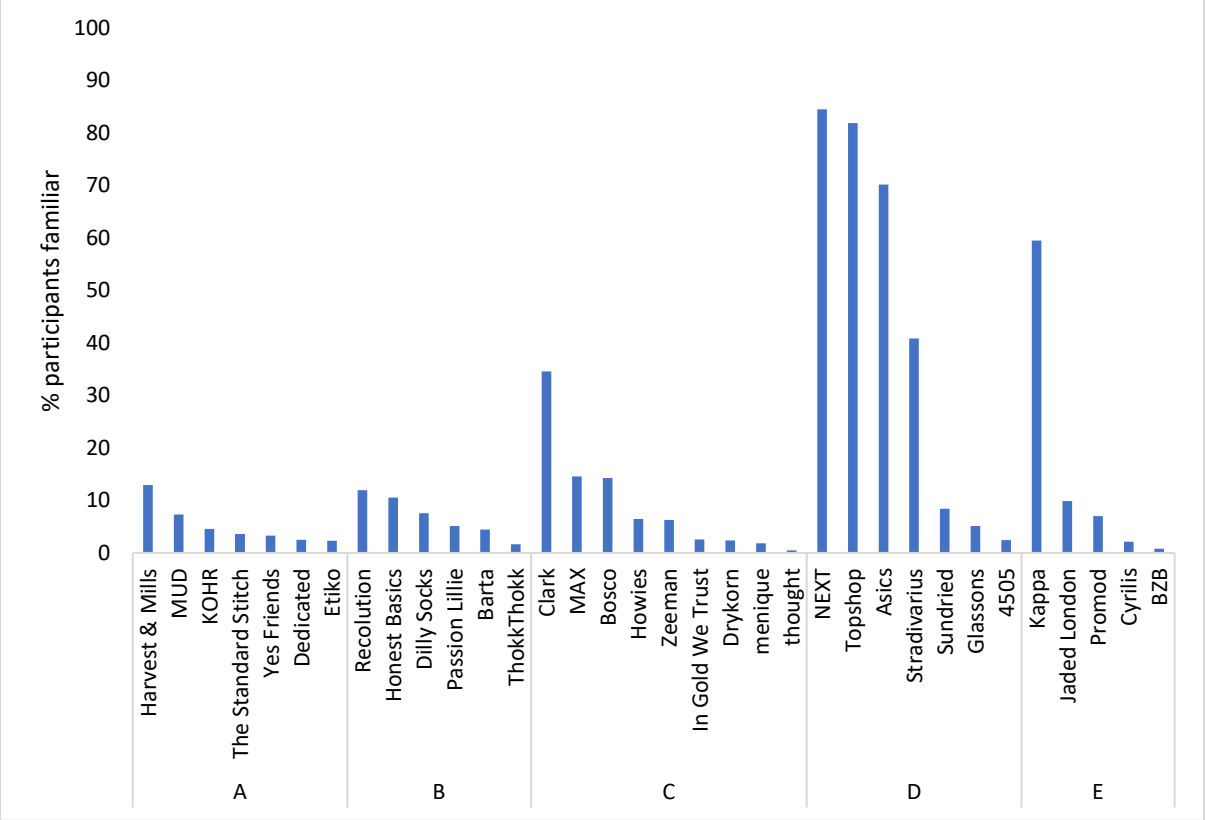

Figure S9. Shop brand familiarity.

Table S14. ZOIB Regression Model with Familiarity Controls

VARIABLES	(1) proportion	(2) oneinflate	(3) zeroinflate
condition = 1, Eco-score	0.26***	1.00***	-0.27
	[0.15 - 0.38]	[0.45 - 1.56]	[-0.63 - 0.09]
	0.000	0.000	0.139
condition = 2, Binary	0.12	-0.08	-0.00
	[-0.00 - 0.24]	[-0.76 - 0.60]	[-0.35 - 0.34]
	0.052	0.823	0.978
budget100	0.02	-0.02	-0.08
	[-0.02 - 0.07]	[-0.23 - 0.19]	[-0.22 - 0.06]
	0.329	0.866	0.252
male = 1, Male	0.09	0.15	-0.11
	[-0.01 - 0.18]	[-0.30 - 0.61]	[-0.40 - 0.18]
	0.081	0.512	0.460
male = 2, Other	0.27	1.70	-11.06
	[-0.70 - 1.23]	[-0.88 - 4.29]	[-686.20 - 664.08]
	0.586	0.196	0.974
age3 = 1, 40-59	0.00	0.31	-0.09
	[-0.11 - 0.12]	[-0.24 - 0.86]	[-0.45 - 0.28]
	0.952	0.267	0.640

age3 = 2, 60+	0.21***	0.38	0.32
	[0.09 - 0.34]	[-0.21 - 0.96]	[-0.05 - 0.68]
	0.001	0.207	0.090
degree = 1, Degree	0.14**	0.08	-0.18
	[0.04 - 0.24]	[-0.40 - 0.57]	[-0.50 - 0.13]
	0.008	0.732	0.253
urbloc = 1, Urban	-0.05	-0.11	0.09
	[-0.15 - 0.05]	[-0.58 - 0.36]	[-0.21 - 0.39]
	0.286	0.660	0.558
abc1 = 1, ABC1	-0.01	0.19	0.01
	[-0.12 - 0.09]	[-0.30 - 0.68]	[-0.30 - 0.33]
	0.838	0.445	0.940
famab	-0.01	0.21	-1.19*
	[-0.30 - 0.27]	[-1.12 - 1.54]	[-2.38 - -0.00]
	0.924	0.754	0.049
famcde	0.08	-0.48	-0.44
	[-0.09 - 0.26]	[-1.36 - 0.39]	[-1.01 - 0.12]
	0.353	0.282	0.123
Constant	-0.74***	-2.88***	-0.67*
	[-0.96 - -0.52]	[-3.95 - -1.81]	[-1.32 - -0.02]
	0.000	0.000	0.044
Observations	1,167	1,167	1,167

*** p<0.001, ** p<0.01, * p<0.05

95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes. All p-values are two tailed despite directional hypotheses.

Table S15. ZOIB Regression with Gender Interaction

VARIABLES	(1) proportion	(2) oneinflate	(3) zeroinflate
condition = 1, Eco-score	0.26**	1.83***	-0.48*
	[0.10 - 0.42]	[0.85 - 2.80]	[-0.95 - -0.00]
	0.001	0.000	0.048
condition = 2, Binary	0.17*	0.49	-0.26
	[0.01 - 0.33]	[-0.65 - 1.64]	[-0.71 - 0.20]
	0.040	0.397	0.267
male = 1, Male	0.11	1.21*	-0.44
	[-0.06 - 0.27]	[0.17 - 2.26]	[-0.92 - 0.04]
	0.203	0.023	0.075
male = 2, Other	0.81	-10.32	-11.65
	[-0.55 - 2.18]	[-1,883.90 - 1,863.26]	[-1,212.88 - 1,189.58]
	0.243	0.991	0.985
0b.condition#0b.male	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
0b.condition#1o.male	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
0b.condition#2o.male	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
1o.condition#0b.male	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
1.condition#1.male	-0.00	-1.34*	0.43
	[-0.23 - 0.22]	[-2.53 - -0.15]	[-0.28 - 1.14]
	0.971	0.027	0.233
1.condition#2.male	0.00	31.42	0.00
	[0.00 - 0.00]	[-34,538.50 - 34,601.35]	[0.00 - 0.00]
	.	0.999	.
2o.condition#0b.male	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
2.condition#1.male	-0.10	-0.94	0.52
	[-0.33 - 0.14]	[-2.37 - 0.50]	[-0.17 - 1.20]
	0.414	0.200	0.139
2.condition#2.male	-1.11	-0.33	-0.03
	[-3.09 - 0.86]	[-2,647.15 - 2,646.49]	[-1,699.39 - 1,699.34]
	0.270	1.000	1.000
budget100	0.02	-0.03	-0.10
	[-0.02 - 0.07]	[-0.23 - 0.18]	[-0.23 - 0.04]
	0.279	0.801	0.156
age3 = 1, 40-59	0.00	0.22	-0.07

	[-0.11 - 0.12]	[-0.31 - 0.75]	[-0.42 - 0.29]
	0.935	0.421	0.713
age3 = 2, 60+	0.21***	0.29	0.36
	[0.09 - 0.34]	[-0.27 - 0.86]	[-0.00 - 0.71]
	0.001	0.314	0.052
degree = 1, Degree	0.13**	0.04	-0.22
	[0.03 - 0.24]	[-0.43 - 0.52]	[-0.53 - 0.09]
	0.010	0.860	0.161
urbloc = 1, Urban	-0.06	-0.11	0.13
	[-0.16 - 0.04]	[-0.57 - 0.35]	[-0.16 - 0.43]
	0.226	0.642	0.380
abc1 = 1, ABC1	-0.01	0.13	-0.02
	[-0.11 - 0.09]	[-0.35 - 0.61]	[-0.33 - 0.29]
	0.866	0.593	0.888
Constant	-0.73***	-3.49***	-0.62
	[-0.95 - -0.51]	[-4.75 - -2.24]	[-1.27 - 0.02]
	0.000	0.000	0.059
Observations	1,200	1,200	1,200

in brackets

*** p<0.001, ** p<0.01, * p<0.05

95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes.

Table S16. ZOIB Regression with Age Interaction

VARIABLES	(1) proportion	(2) oneinflate	(3) zeroinflate
condition = 1, Eco-score	0.35***	1.05*	-0.80*
	[0.17 - 0.54]	[0.20 - 1.91]	[-1.45 - -0.15]
	0.000	0.015	0.017
condition = 2, Binary	0.13	-2.18*	0.21
	[-0.05 - 0.32]	[-4.28 - -0.08]	[-0.32 - 0.74]
	0.165	0.042	0.443
age3 = 1, 40-59	0.02	-0.13	-0.24
	[-0.17 - 0.21]	[-1.19 - 0.94]	[-0.81 - 0.32]
	0.837	0.815	0.402
age3 = 2, 60+	0.36**	0.16	0.46
	[0.14 - 0.58]	[-1.02 - 1.33]	[-0.12 - 1.05]
	0.001	0.794	0.122
0b.condition#0b.age3	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
0b.condition#1o.age3	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
0b.condition#2o.age3	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
1o.condition#0b.age3	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
1.condition#1.age3	-0.08	0.00	0.86
	[-0.34 - 0.18]	[-1.25 - 1.26]	[-0.02 - 1.73]
	0.527	0.995	0.054
1.condition#2.age3	-0.28	-0.07	0.57
	[-0.58 - 0.02]	[-1.44 - 1.30]	[-0.33 - 1.47]
	0.069	0.920	0.213
2o.condition#0b.age3	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
2.condition#1.age3	0.07	2.91*	-0.12
	[-0.20 - 0.34]	[0.58 - 5.24]	[-0.93 - 0.69]
	0.631	0.014	0.775
2.condition#2.age3	-0.14	2.18	-0.77
	[-0.44 - 0.15]	[-0.26 - 4.61]	[-1.61 - 0.06]
	0.338	0.080	0.070
budget100	0.02	-0.02	-0.10
	[-0.02 - 0.07]	[-0.23 - 0.18]	[-0.23 - 0.04]
	0.291	0.833	0.162
male = 1, Male	0.07	0.25	-0.15
	[-0.03 - 0.17]	[-0.20 - 0.69]	[-0.44 - 0.14]
	0.155	0.277	0.299
male = 2, Other	0.29	2.12	-13.19
	[-0.67 - 1.26]	[-0.63 - 4.87]	[-1,683.48 - 1,657.10]
	0.549	0.131	0.988
degree = 1, Degree	0.14**	0.07	-0.23
	[0.04 - 0.24]	[-0.40 - 0.54]	[-0.54 - 0.09]

	0.008	0.769	0.153
urbloc = 1, Urban	-0.06	-0.10	0.13
	[-0.15 - 0.04]	[-0.56 - 0.36]	[-0.17 - 0.43]
	0.274	0.677	0.404
abc1 = 1, ABC1	-0.01	0.13	-0.01
	[-0.11 - 0.10]	[-0.35 - 0.60]	[-0.32 - 0.30]
	0.897	0.604	0.958
Constant	-0.75***	-2.76***	-0.72*
	[-0.98 - -0.52]	[-3.88 - -1.63]	[-1.39 - -0.04]
	0.000	0.000	0.038
Observations	1,200	1,200	1,200

*** p<0.001, ** p<0.01, * p<0.05

95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes.

Table S17. ZOIB Regression with Concern Interaction

VARIABLES	(1) proportion	(2) oneinflate	(3) zeroinflate
condition = 1, Eco-score	0.12	0.61	0.02
	[-0.07 - 0.31]	[-0.31 - 1.52]	[-0.52 - 0.55]
	0.201	0.192	0.956
condition = 2, Binary	0.08	-0.94	0.09
	[-0.11 - 0.26]	[-2.30 - 0.42]	[-0.44 - 0.61]
	0.418	0.176	0.747
ecodesc3 = 1	0.14	-0.80	-0.07
	[-0.05 - 0.33]	[-2.15 - 0.56]	[-0.63 - 0.49]
	0.139	0.250	0.806
ecodesc3 = 2	0.02	0.46	0.01
	[-0.18 - 0.22]	[-0.54 - 1.47]	[-0.56 - 0.59]
	0.856	0.367	0.965
0b.condition#0b.ecodesc3	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
0b.condition#1o.ecodesc3	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
0b.condition#2o.ecodesc3	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
1o.condition#0b.ecodesc3	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
1.condition#1.ecodesc3	0.07	1.24	-0.39
	[-0.19 - 0.34]	[-0.31 - 2.78]	[-1.20 - 0.43]
	0.590	0.117	0.354
1.condition#2.ecodesc3	0.39**	0.39	-0.72
	[0.10 - 0.68]	[-0.86 - 1.64]	[-1.64 - 0.19]
	0.008	0.544	0.122
2o.condition#0b.ecodesc3	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
2.condition#1.ecodesc3	-0.00	2.00*	-0.31
	[-0.27 - 0.26]	[0.11 - 3.90]	[-1.10 - 0.49]
	0.990	0.038	0.446
2.condition#2.ecodesc3	0.16	0.52	-0.03
	[-0.14 - 0.46]	[-1.31 - 2.36]	[-0.88 - 0.82]
	0.289	0.578	0.937
budget100	0.03	-0.02	-0.10
	[-0.02 - 0.07]	[-0.22 - 0.19]	[-0.23 - 0.04]
	0.245	0.882	0.159
male = 1, Male	0.10*	0.35	-0.17
	[0.01 - 0.20]	[-0.11 - 0.81]	[-0.46 - 0.12]
	0.035	0.131	0.258
male = 2, Other	0.29	1.43	-12.84
	[-0.68 - 1.25]	[-1.14 - 3.99]	[-1,597.73 - 1,572.05]
	0.562	0.275	0.987
age3 = 1, 40-59	0.03	0.33	-0.10
	[-0.08 - 0.14]	[-0.21 - 0.86]	[-0.46 - 0.26]

	0.610	0.230	0.583
age3 = 2, 60+	0.23***	0.35	0.31
	[0.10 - 0.35]	[-0.23 - 0.92]	[-0.05 - 0.67]
	0.000	0.236	0.094
degree = 1, Degree	0.11*	-0.06	-0.19
	[0.01 - 0.21]	[-0.54 - 0.43]	[-0.50 - 0.13]
	0.030	0.816	0.243
urbloc = 1, Urban	-0.05	-0.10	0.12
	[-0.15 - 0.05]	[-0.57 - 0.36]	[-0.18 - 0.42]
	0.309	0.660	0.420
abc1 = 1, ABC1	-0.00	0.15	-0.02
	[-0.10 - 0.10]	[-0.33 - 0.63]	[-0.33 - 0.29]
	0.961	0.542	0.908
Constant	-0.80***	-2.99***	-0.70*
	[-1.03 - -0.56]	[-4.15 - -1.82]	[-1.39 - -0.02]
	0.000	0.000	0.045
Observations	1,200	1,200	1,200

in brackets

*** p<0.001, ** p<0.01, * p<0.05

95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes.

Table S18. ZOIB Regression with Climate Change Worry Interaction

VARIABLES	(1) proportion	(2) oneinflate	(3) zeroinflate
condition = 1, Eco-score	0.25	-0.28	-0.13
	[-0.01 - 0.52]	[-1.62 - 1.05]	[-0.83 - 0.56]
	0.064	0.676	0.707
condition = 2, Binary	0.08	-0.44	0.20
	[-0.18 - 0.34]	[-1.76 - 0.89]	[-0.44 - 0.84]
	0.539	0.519	0.538
wor3 = 1	-0.11	-1.15	-0.64*
	[-0.33 - 0.11]	[-2.46 - 0.16]	[-1.24 - -0.03]
	0.316	0.084	0.040
wor3 = 2	-0.01	-0.11	-0.41
	[-0.23 - 0.22]	[-1.18 - 0.96]	[-1.02 - 0.19]
	0.942	0.840	0.180
0b.condition#0b.wor3	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
0b.condition#1o.wor3	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
0b.condition#2o.wor3	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
1o.condition#0b.wor3	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
1.condition#1.wor3	-0.02	1.95*	0.09
	[-0.34 - 0.30]	[0.21 - 3.68]	[-0.81 - 0.98]
	0.905	0.028	0.849
1.condition#2.wor3	0.03	1.39	-0.53
	[-0.29 - 0.36]	[-0.15 - 2.93]	[-1.45 - 0.39]
	0.850	0.076	0.261
2o.condition#0b.wor3	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
2.condition#1.wor3	0.08	1.15	-0.00
	[-0.24 - 0.39]	[-0.68 - 2.98]	[-0.85 - 0.84]
	0.631	0.217	0.994
2.condition#2.wor3	0.01	-0.06	-0.78
	[-0.31 - 0.33]	[-1.76 - 1.63]	[-1.66 - 0.10]
	0.964	0.943	0.084
budget100	0.02	-0.01	-0.12
	[-0.02 - 0.07]	[-0.22 - 0.20]	[-0.25 - 0.02]
	0.302	0.925	0.095
male = 1, Male	0.07	0.26	-0.22
	[-0.03 - 0.16]	[-0.19 - 0.70]	[-0.51 - 0.08]
	0.185	0.261	0.151
male = 2, Other	0.23	1.53	-13.27
	[-0.74 - 1.19]	[-1.07 - 4.13]	[-1,547.64 - 1,521.11]
	0.642	0.248	0.986
age3 = 1, 40-59	0.01	0.30	-0.13
	[-0.11 - 0.12]	[-0.23 - 0.84]	[-0.48 - 0.23]

	0.889	0.263	0.482
age3 = 2, 60+	0.21**	0.29	0.36
	[0.08 - 0.33]	[-0.28 - 0.86]	[-0.01 - 0.72]
	0.001	0.326	0.054
degree = 1, Degree	0.13*	-0.06	-0.16
	[0.03 - 0.24]	[-0.54 - 0.42]	[-0.48 - 0.15]
	0.011	0.801	0.308
urbloc = 1, Urban	-0.06	-0.12	0.18
	[-0.16 - 0.04]	[-0.58 - 0.34]	[-0.12 - 0.48]
	0.235	0.613	0.248
abc1 = 1, ABC1	-0.01	0.16	0.03
	[-0.11 - 0.10]	[-0.33 - 0.64]	[-0.28 - 0.34]
	0.882	0.523	0.848
Constant	-0.65***	-2.54***	-0.30
	[-0.92 - -0.39]	[-3.78 - -1.30]	[-1.04 - 0.45]
	0.000	0.000	0.434
Observations	1,200	1,200	1,200

in brackets

*** p<0.001, ** p<0.01, * p<0.05

95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes.

Shopping Frequency and Annual Spend

Participants reported their "typical" clothing spend depending on how often they reported shopping for clothes, both online and in store. *Figure S2* shows how often participants reported shopping both online and in store. For example, a participant who reported shopping for clothes in store once or twice per year was asked their spend during these episodes, whereas those who reported shopping online weekly were asked about their weekly online spend. We standardised "annual" spend by applying a multiplier to the reported spend figure depending on the frequency (e.g., 0.5 for those who responded to 'once or twice per year' questions, 52 for those who responded to weekly questions). After summing online and in store spend, the median annual estimate was €600 but with very large skew (M = €3048.16, SD = €45,303.44). We trimmed outliers as those who spent more than 1.5*IQR above the 3rd quartile (i.e., above €5310 per year; n = 64). We then classified "big spenders" as the top quartile of spenders among the remaining sample (above €1320 per year).

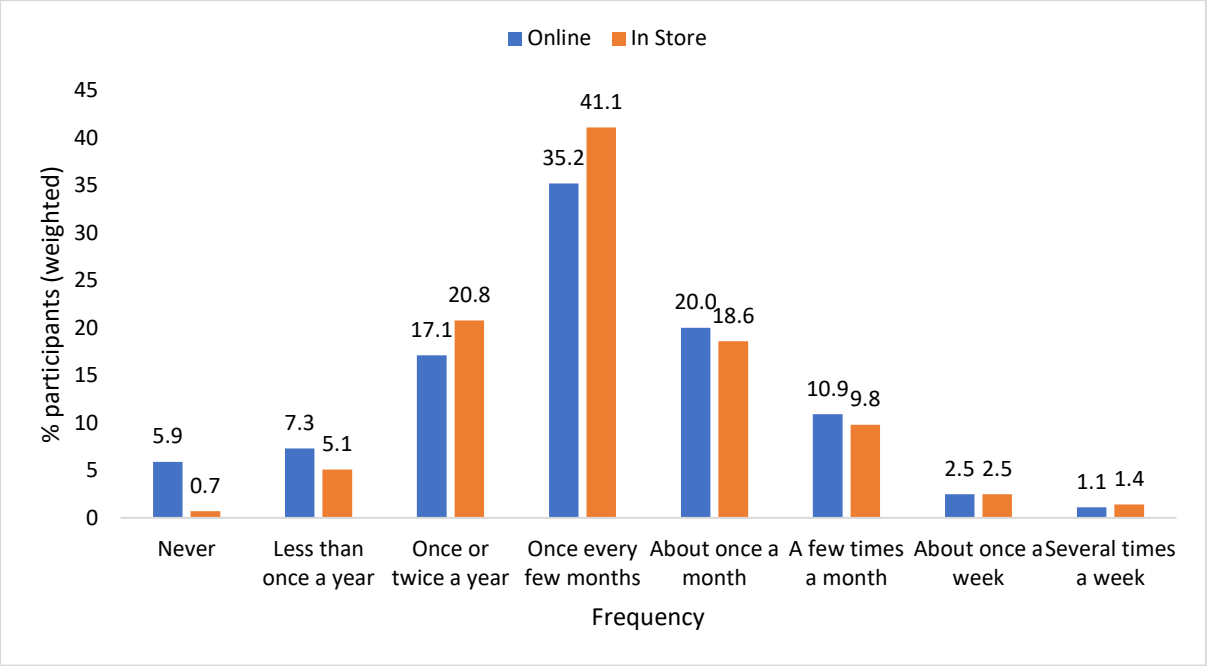

Figure S10. Shopping frequency. Responses are weighted by gender, age and educational attainment.

Table S19. ZOIB Regression with Annual Spend Interaction

VARIABLES	(1) proportion	(2) oneinflate	(3) zeroinflate
condition = 1, Eco-score	0.29***	1.25***	-0.18
	[0.15 - 0.43]	[0.61 - 1.88]	[-0.58 - 0.23]
	0.000	0.000	0.399
condition = 2, Binary	0.13	0.03	-0.07
	[-0.01 - 0.26]	[-0.74 - 0.80]	[-0.47 - 0.33]
	0.069	0.943	0.736
bigspend = 1	-0.12	0.15	-0.00
	[-0.32 - 0.07]	[-0.91 - 1.22]	[-0.57 - 0.56]
	0.225	0.779	0.987
0b.condition#0b.bigspend	0.00	0.00	0.00

	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
0b.condition#1o.bigspend	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
1o.condition#0b.bigspend	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
1.condition#1.bigspend	-0.21	-0.51	-0.63
	[-0.48 - 0.06]	[-1.78 - 0.76]	[-1.53 - 0.27]
	0.130	0.431	0.171
2o.condition#0b.bigspend	0.00	0.00	0.00
	[0.00 - 0.00]	[0.00 - 0.00]	[0.00 - 0.00]
	.	.	.
2.condition#1.bigspend	-0.07	-0.52	-0.07
	[-0.34 - 0.21]	[-2.18 - 1.15]	[-0.89 - 0.74]
	0.618	0.544	0.859
budget100	0.02	-0.01	-0.09
	[-0.02 - 0.07]	[-0.21 - 0.20]	[-0.23 - 0.05]
	0.350	0.951	0.212
male = 1, Male	0.05	0.22	-0.12
	[-0.05 - 0.15]	[-0.23 - 0.67]	[-0.42 - 0.17]
	0.328	0.328	0.414
male = 2, Other	0.17	1.81	-11.50
	[-0.79 - 1.13]	[-0.70 - 4.33]	[-809.49 - 786.48]
	0.734	0.158	0.977
age3 = 1, 40-59	-0.04	0.18	-0.02
	[-0.16 - 0.08]	[-0.36 - 0.72]	[-0.39 - 0.36]
	0.497	0.514	0.929
age3 = 2, 60+	0.16*	0.24	0.40*
	[0.03 - 0.29]	[-0.34 - 0.82]	[0.03 - 0.78]
	0.015	0.412	0.036
degree = 1, Degree	0.12*	0.05	-0.23
	[0.02 - 0.23]	[-0.42 - 0.53]	[-0.55 - 0.10]
	0.021	0.823	0.168
urbloc = 1, Urban	-0.05	-0.07	0.10
	[-0.15 - 0.05]	[-0.53 - 0.40]	[-0.20 - 0.41]
	0.321	0.780	0.504
abc1 = 1, ABC1	-0.00	0.10	0.00
	[-0.11 - 0.10]	[-0.39 - 0.59]	[-0.32 - 0.33]
	0.938	0.692	0.976
Constant	-0.61***	-2.97***	-0.79*
	[-0.83 - -0.38]	[-4.05 - -1.89]	[-1.47 - -0.12]
	0.000	0.000	0.021
Observations	1,136	1,136	1,136

in brackets

*** p<0.001, ** p<0.01, * p<0.05

95% confidence intervals in square brackets. Budget is divided by 100 to for presentation purposes.

Shop Spend vs. Budget

Participants were endowed with a budget between €180 and €540, selected at random from a distribution that increased in €10 intervals. Although they were free to spend as much of this budget as they liked and could not redeem any unspent cash, the proportion of budget spent declined strongly as the size of the budget increased (Figure S1). Spending appeared to plateau at approximately €230, regardless of the budget allowance.

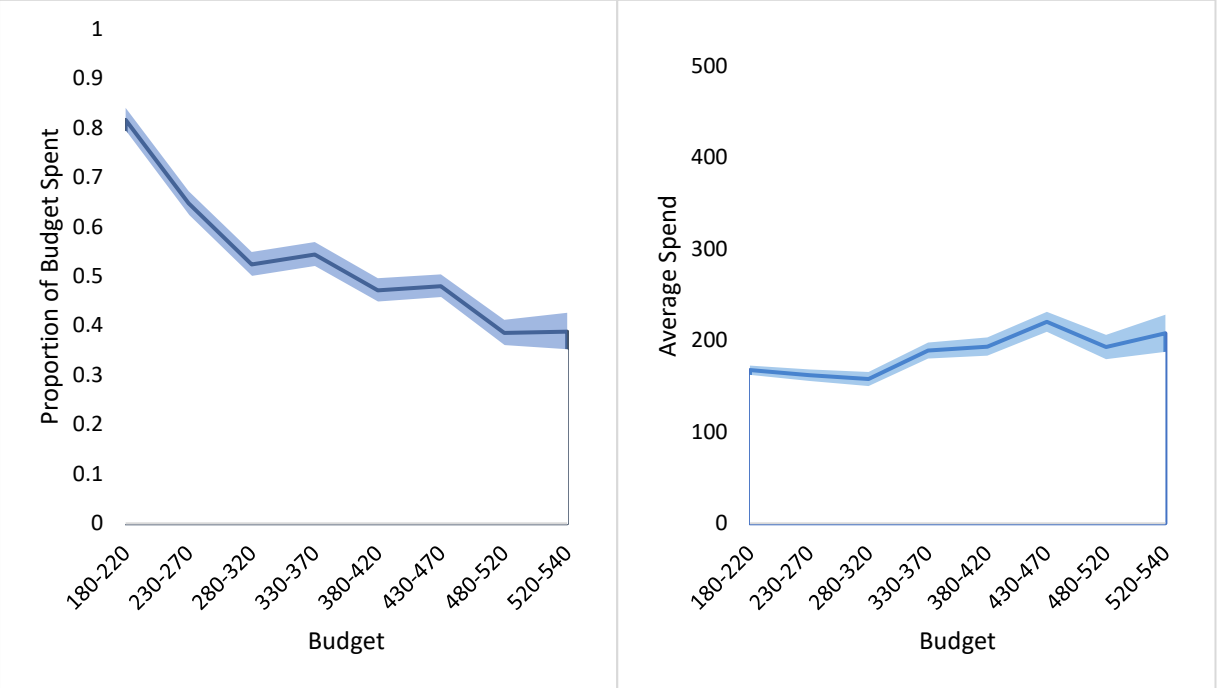

Figure S11. Proportion of Budget Spent (left) and Absolute Amount Spent (Right). Shaded areas are the standard error.

Instrumentation

[Quotas: *gender, age, social grade, region*]

Study Information

Please read the following information carefully

Many thanks for participating in this research. This information page explains what to expect.

Who is conducting the study?

We are the Behavioural Research Unit at the Economic and Social Research Institute (ESRI). We are funded by public bodies interested in helping to understand how people make decisions.

What is the study about?

This study is about how consumers shop for clothes online.

What is expected of me?

We will first ask you to confirm that you are willing to participate. You will then be shown an online clothing store and asked to shop online using credit that we will give you. Please complete the study on the device (e.g. computer) you usually use to shop for clothes online if you do so.

(Click Next to continue)

Is there any reason I can't take part?

You must be 18 years or over.

What do I need to do?

We will ask you to shop for clothes as you normally might in an online clothing shop. You will be given credit to use and you can buy as many items as you like within that credit. **You will be entered into a raffle to really receive the products that you choose**. The raffle will remain open for as long as the survey remains open, approximately one week. You will be notified if you are a winner today, on the last pages of the survey. If you are selected, and choose to receive your products, the ESRI will arrange for the products that you chose to be delivered to you. No cash alternative can be substituted for the prize. We will endeavour to source all products that you choose but if a product is not available, we will not be able to substitute it. We can only send products to addresses within Ireland.

We would like you to do the shopping task and read any follow up questions carefully. Please respond honestly. It will only take around 10 minutes. Please complete it in one sitting.

If you have difficulty loading any page, please refresh your browser - the programme will save your progress as you complete the study.

(Click Next to continue)

How will my responses be recorded?

All of your answers will remain confidential. They will not be stored with your name. Instead, we store them against a number (your 'Private ID'). We have a file that matches this Private ID to your RED-C account, so that we can pay you. As soon as everyone has taken part and been paid, we delete the file that links your Private ID to your RED-C account. So all responses are kept anonymous.

The responses will initially be held on the survey company's Microsoft servers in Dublin, then transferred to secure files on computers in the ESRI. Once all responses have been made anonymous they will be put up online for other researchers to study, in line with best scientific practice.

If you are selected to receive your products, we will ask you for your contact details so that we can send them to you. This information will not be stored with any of your answers to the

survey questions. It will be stored by the ESRI in a separate location and will only be kept until the end of the study. When we have sent you your products, we will permanently destroy this information so there will be no record of it.

Data Protection

This study is carried out in accordance with Data Protection legislation. If you have any queries in relation to this, please contact DataProtection@esri.ie

(Click Next to continue)

Behavioural Research Unit Participant Consent Form

Please read the below information carefully.

- I have read and understand the information on the previous pages, which explains the nature of the study I am to undertake.
- I consent to taking part as a study participant.
- I confirm that I am aged 18 or over.
- I understand that the aim of the research is to understand consumer behaviour when shopping for clothes online.
- I understand that I will be presented with a series of tasks through my browser and that my responses will initially be recorded and stored on Gorilla's Microsoft servers in Dublin. I understand that, once all data has been collected, my responses will subsequently be deleted from those servers and stored on ESRI computers only.
- I understand that the study data will be stored against a Private ID which is unique to this study and cannot be used to identify me.
- I understand that the data will be available to researchers and will only be used for research purposes. I understand that my anonymous responses may be made available in online data repositories for research purposes.
- I understand that I will be entered into a raffle to receive the products I have chosen in the online shopping task.
- I understand that if I am selected to receive the products I have chosen, the researchers will ask for my contact details, and if I agree to provide them, will only use these to send me the products.
- I understand that the research team will delete the file containing my contact details when my products have been sent to me.
- I understand that I may withdraw participation at any point during the study by exiting the web browser, and that no data will be stored unless I complete the study in full.
- I understand that once I complete the study in full I will not be able to withdraw my data (as this data will be completely anonymised and so cannot be linked to me).

- I have read and understood the above and consent to taking part as an experimental participant.

Page 1 Instructions

We are interested in peoples' experiences of online shopping. We will direct you to a shop where you can shop for real clothes. The brands and prices you see will be real. We will give you credit to spend and you can use this to buy as many items as you like, but please **select at least one item**. Otherwise, please use the shop as you normally might.

10 people will be entered into a draw to receive the products they chose. The computer programme will randomly selected whether you will receive the products or not - what you choose to buy will not influence whether you win. We will tell you if you were selected to receive the items you chose at the end of the study.

This is a small shop that does not include all of the types of clothes you would expect to find in an online clothing store. **You will be able to select the size for clothing you purchase only if you are selected to receive the items you selected.**
But first, we have some questions about your shopping habits.

Page 2 Purchase frequency

- How often do you buy clothes **in store**? *freq_instore*
    - Never, Less than once a year, Once or twice a year, Once every few months, About once a month, A few times a month, About once a week, Several times a week
- How often do you buy clothes **online**? *freq_online*
    - Never, Less than once a year, Once or twice a year, Once every few months, About once a month, A few times a month, About once a week, Several times a week

Page 3 Typical spend [for comparison against credit]

- You said you buy clothes **in store** [*response from above, unless 'Never'*]. When you do buy clothes in store, how much do you typically spend? *spend_instore*
  The amount probably varies and depends on how much you are buying. For this question, we are just interested in a rough estimate of how much you spend on average. Please enter an amount in Euro but do not use the € symbol.

- You said you buy clothes **online** [*response from above, unless 'Never'*]. When you do buy clothes in store, how much do you typically spend? *spend_online*
  The amount probably varies and depends on how much you are buying. For this question, we are just interested in a rough estimate of how much you spend on average. Please enter an amount in Euro but do not use the € symbol.

Page 4 Intentions to buy in near term

How likely are you to buy each of the following over the next six months (either in person or online)?

- Jeans *int_jeans*
- T-shirt *int_tshirt*
- Shorts *int_short*
- Socks *int_socks*
    - Will definitely not buy 1 – 2 – 3 – 4 – 5 – 6 – 7 Will definitely buy

Page 5 – Intro to Shop

You will now be directed to the online Clothing Store.
Please shop for clothes as you normally might online. Remember, there is a chance you will win the clothes you choose for real, so please purchase clothes you would like to wear.

[SHOP]
Welcome toClothing Store.

Use the navigation bar above to see products in each category. You can see more detail on any product by clicking on it. Remember, please use the shop as if you were shopping for real. **You may be selected at random to receive the items you choose**, so please only choose things you want.

The 'Cart' on the right displays the amount of credit that has been applied to your account. Clothes you choose will move into your Cart. If you change your mind about something, you can take it out of your Cart by clicking 'Remove.' You can use as much or as little of this credit as you like, but **please choose at least one item**.
When you have finished shopping, click 'Checkout' to complete your purchase. If you are selected to receive the clothes you chose, **you will be asked for size details along with your shipping information at the end of the study**.

To begin shopping, click on one of the categories in the above navigation bar.

Eco-label text – ecoscore:
What is the Eco-Score?

Eco-Score is an environmental impact rating system for clothes, based on the GoodOnYou system. It takes into account the brand's policies on carbon emissions and energy use, impacts on water and biodiversity, microfibre pollution, deforestation, chemical use, product materials and durability and waste management practices. Each item of clothing is given one of five letters: A, B, C, D or E. 'A' is the highest score, meaning that the brand producing the clothing has strong policies for limiting their environmental impact and demonstrates independent accreditation of their supply chain. 'E' is the lowest score, meaning that the brand producing the clothing discloses little to no concrete information on their sustainability practices and are unlikely to be making real sustainability efforts.

Eco-label text – ecolabel:
What is the Eco-label?

The Eco-label is an environmental accreditation system for clothes. This one is based on the GoodOnYou system. It takes into account the brand's policies on carbon emissions and energy use, impacts on water and biodiversity, microfibre pollution, deforestation, chemical use, product materials and durability and waste management practices. Brands that have strong policies for limiting their environmental impact and demonstrate independent accreditation of their supply chain can display the label. Brands that disclose little to no concrete information on their sustainability practices and are unlikely to be making real sustainability efforts cannot display the label.

Page 5 Purpose check
We are interested in your experience of participating today.

- What do you think is the purpose of the study? *shop_purpose*
  - [open text]
- How easy did you find the shop to use? *shop_ease*

- Very difficult 1 – 2 – 3 – 4 – 5 – 6 – 7 Very easy
- How satisfied are you with the items you selected? *shop_satis*
  - Not at all satisfied 1 – 2 – 3 – 4 – 5 – 6 – 7 Very satisfied
- How likely are you to wear the items you selected if you were to receive them for real? *shop_wear*
  - Not at all likely 1 – 2 – 3 – 4 – 5 – 6 – 7 Very likely

Page 6 Own behaviour

The rest of the study contains some standard survey questions about your usual shopping behaviour and preferences.
In this section, we have a few questions about the clothes you currently own. If you don't know the answer exactly, please give your best guess.
The first few questions are about any **jeans** that you own.

- How many (pairs of) jeans do you own? *jeans_own*
- How many (pairs of) jeans did you buy **in the last year**? *jeans_bought*
- How much money did you spend on jeans **in the last year**? *jeans_spent*
- From which kinds of brands do you usually buy your jeans? [SATA] *jeans_brand*
  - Luxury brands (e.g., Burberry, Saint Laurent)
  - Mid-range brands (e.g., Levi's, Wrangler)
  - Other high street (e.g., H&M, Forever 21)
  - Supermarket brand (e.g., M&S, F&F)
  - Budget (e.g., Penneys, Shein, Temu)
  - Charity or second-hand stores (e.g., Oxfam, Depop)
  - Other

Page 7 ctd.

The next few questions are about any **t-shirts** that you own.

- How many t-shirts do you own? *tshirt_own*
- How many t-shirts did you buy **in the last three months**? *tshirt_bought*
- How much money did you spend on t-shirts **in the last three months**? *tshirt_spent*
- From which kinds of brands do you usually buy your t-shirts? [SATA] *tshirt_brand*
  - Luxury brands (e.g., Burberry, Saint Laurent)
  - Mid-range brands (e.g., Ted Baker, Hugo Boss)
  - Other high street (e.g., H&M, Forever 21)
  - Supermarket brand (e.g., M&S, F&F)
  - Budget (e.g., Penneys, Shein, Temu)
  - Charity or second-hand stores (e.g., Oxfam, Depop)
  - Other

Page 8 Preferences

- When you shop for clothes, how much attention do you normally pay to…?

- Brand *pref_brand*
- Comfort *pref_comf*
- Ethical production (e.g., labour practices) *pref_ethic*
- Price *pref_price*
- Quality of the material *pref_qual*
- Please choose '1' [screen out those who miss this]
- Style *pref_style*
- Sustainability / environmental impact *pref_env*
  - None at all 1 – 2 – 3 – 4 – 5 – 6 – 7 A great deal

Page 9 Clothing impact - perception

The next question is about the environment.

- Below is a list of industries. Please rank them in order of which ones you think cause the most carbon (greenhouse gas) emissions.
  Please put the one you think contributes the most as '1', followed by the next most as '2', and so on.
  - Aviation and shipping [3-4]S
  - Clothes production [2]
  - Food production [1]
  - Waste [3-4]

Page 9 Attention to info

- When doing the shopping task today, how much attention did you pay to environmental information on the clothes? *att_env*
  - None at all 1 – 2 – 3 – 4 – 5 – 6 – 7 A great deal

Page 10 Attention to info [for both groups]

- Did you notice any of the following kinds of 'eco-labels' while doing the shopping task? *att_eco*

  - I didn't notice any eco-labels

Page 11 Policy support

The text below explains an example 'eco-label' for clothing. Please read the text carefully.

[image here]

An Eco-Score is an environmental impact rating system for clothes. This example one is based on

the GoodOnYou system. It takes into account the brand's policies on carbon emissions and energy use, impacts on water and biodiversity, microfibre pollution, deforestation, chemical use, product materials and durability and waste management practices. Each item of clothing is given one of five letters: A, B, C, D or E. 'A' is the highest score, meaning that the brand producing the clothing has strong policies for limiting their environmental impact and demonstrates independent accreditation of their supply chain. 'E' is the lowest score, meaning that the brand producing the clothing discloses little to no concrete information on their sustainability practices and are unlikely to be making real sustainability efforts.

How supportive would you be of mandating an eco-label like the one above to indicate the environmental impact of clothes sold…

… online (e.g., beside the price)? *pol_online*

- Not at all supportive 1 – 2 – 3 – 4 – 5 – 6 – 7 Very supportive

… in store (e.g., on the price tag)? *pol_instore*

- Not at all supportive 1 – 2 – 3 – 4 – 5 – 6 – 7 Very supportive

Pages 12-22 Brand impact knowledge

In this next task, we are going to ask you to guess the Eco-Score of different clothing brands.

[image here]

As a reminder, an Eco-Score is an environmental impact rating system for clothes. This example one is based on the GoodOnYou system. It takes into account the brand's policies on carbon emissions and energy use, impacts on water and biodiversity, microfibre pollution, deforestation, chemical use, product materials and durability and waste management practices. Each item of clothing is given one of five letters: A, B, C, D or E. 'A' is the highest score, meaning that the brand producing the clothing has strong policies for limiting their environmental impact and demonstrates independent accreditation of their supply chain. 'E' is the lowest score, meaning that the brand producing the clothing discloses little to no concrete information on their sustainability practices and are unlikely to be making real sustainability efforts.

We are interested in how good people are at guessing the Eco-Score of different brands. On the next page, we will show you 10 brands, one at a time, and ask you to guess the Eco-Score.

Pages shuffled

What Eco-Score do you think **Nudie Jeans Co.** would receive? *es_nudie*

Remember that 'A' is the highest rating and 'E' is the lowest rating.

- **A**, B, C, D, E, Unsure

What Eco-Score do you think **Stanley/Stella** would receive? *es_ss*

Remember that 'A' is the highest rating and 'E' is the lowest rating.

- **A**, B, C, D, E, Unsure

What Eco-Score do you think **Fresh Cuts** would receive? *es_fc*

Remember that 'A' is the highest rating and 'E' is the lowest rating.

- A, **B**, C, D, E, Unsure

What Eco-Score do you think **Patagonia** would receive? *es_pata*

Remember that 'A' is the highest rating and 'E' is the lowest rating.

- A, **B**, C, D, E, Unsure

What Eco-Score do you think **The North Face** would receive? *es_nf*

Remember that 'A' is the highest rating and 'E' is the lowest rating.

- A, B, **C**, D, E, Unsure

What Eco-Score do you think **Timberland** would receive? *es_tland*

Remember that 'A' is the highest rating and 'E' is the lowest rating.

- A, B, **C**, D, E, Unsure

What Eco-Score do you think **Wrangler** would receive? *es_wrang*

Remember that 'A' is the highest rating and 'E' is the lowest rating.

- A, B, C, **D**, E, Unsure

What Eco-Score do you think **Gym+Coffee** would receive? *es_gc*

Remember that 'A' is the highest rating and 'E' is the lowest rating.

- A, B, C, **D**, E, Unsure

What Eco-Score do you think **Intersport** would receive? *es_is*

Remember that 'A' is the highest rating and 'E' is the lowest rating.

- A, B, C, D, **E**, Unsure

What Eco-Score do you think **JoJo Maman Bébé** would receive? *es_jmb*

Remember that 'A' is the highest rating and 'E' is the lowest rating.

- A, B, C, D, **E**, Unsure

Page 23 Brand familiarity

- The following brands featured in the shop you used earlier in this study. Which of these had you heard of before today? Select all that apply [display subset of 7].
  - Drykorn *fam_[brand]*
  - MUD
  - KOHR
  - Bosco
  - Jaded London
  - In Gold We Trust
  - Barta
  - The Standard Stitch
  - Passion Lillie
  - Sundried
  - ThokkThokk
  - MAX
  - Harvest&mills
  - Cyrillis
  - Promod
  - Yes Friends
  - NEXT
  - Glassons
  - Promod
  - Howies
  - Stradivarius
  - BZB
  - 4505
  - Clark
  - Honest Basics
  - Dedicated
  - Dilly Socks

- thought
- menique
- Topshop
- Asics
- Kappa
- Etiko
- Recolution
- Zeeman

Page 24 Clothing impact concern

Below is a description of a hypothetical person. Please read the description carefully, thinking about how similar to you the description is.

[Sarah/David (*depending on p gender*)] tries to think about the environment when shopping for clothes. S/he doesn't have many clothes, just some basics that s/he 'mixes-and-matches.' If something gets worn out, Sarah/David tries to get it repaired before buying something new. S/he never shops on impulse. When s/he needs something, s/he usually tries second-hand clothes shops first before checking out local designers and small businesses. S/he looks for clothes made from organic, recycled or biodegradable materials instead of synthetic fibres like polyester and nylon and makes sure any dyed clothes are low-impact. Sarah/David donates any used clothes to charity shops or sends them to be recycled.

- How similar are you to the description of [Sarah/David]? *eco_desc*
  - Not at all similar 1 – 2 – 3 – 4 – 5 – 6 – 7 Extremely similar

Page 25 Climate worry

- In general, how worried are you about climate change? *worry_cc*
  - Not at all 1 – 2 – 3 – 4 – 5 – 6 – 7 Extremely

Page 26+ Sociodemographics

[socdems]

Page ?? Size and shipping info

Congratulations, you have been selected to receive the products that you chose.

On the next page, we will ask you about your size requirements and to provide your shipping details (i.e., your name, contact details and address) so that we can send you the products. These details will be deleted when products have been purchased and will not be used for any other purpose.

Please also note that we will endeavour to send all of the products that you chose, but if a product is not available we will not be able to send it or substitute it.

- Do you want to receive the products you selected? *receive*

- Yes, No

Page ?? [if Yes] ctd.

This section asks you to provide size details. This information will be used to send you your products. Please indicate what size you would like to receive in each. Please note we can only issue one size for each category. If you need a different size from those listed here, the research team will check availability for your product. They will contact you to confirm the required size.

- Women's Jeans / Shorts Waist Size (inches): *fsize_jeans*
  - I did not choose any women's shorts/jeans, 24, 26, 28, 30, 32, 34, 36, 38, a different size (write in)
- Men's Jeans / Shorts Waist Size (inches): *msize_tshirt*
  - I did not choose any men's shorts/jeans, 24, 26, 28, 30, 32, 34, 36, 38, a different size (write in)
- Women's T-Shirt: *fsize_tshirt*
  - I did not choose any women's t-shirts, XS, S, M, L, XL, XXL, a different size (write in)
- Men's T-Shirt: *msize_tshirt*
  - I did not choose any men's t-shirts, XS, S, M, L, XL, XXL, a different size (write in)

Page ?? [If Yes] ctd.

This section asks you to provide your name, contact details and address. This information will be used to send you your products.

None of this information will be stored with any of your responses to the survey questions. We will only use this information to send you your products. It will be deleted as soon as we have sent your products.

- What is your name? *name*
- What is your mobile number? Please note, if you wish to receive the products, you must provide a mobile number with your address so the courier can deliver. *num*
- What is your email address? *email*
- What is your address? *address*
- If you know your Eircode, and have not already entered it above, please include it here. It will make it easier for the delivery company to find the right address. If you do not know it, they will deliver using the details you have provided above and you can leave this blank. *eircode*

[Standard data_use & comment questions]