



# Seeking or ignoring ethical certifications in consumer choice

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## ABSTRACT

Consumers often encounter, and claim to care about, ethical information concerning the products they purchase. Across three studies, we investigate how the accessibility of this information impacts choice. When consumers must seek out product attribute information, the impact of ethical certifications (Fairtrade and Organic) is diminished relative to other attributes. Both positive and negative framing of certifications increase their impact on choice relative to neutral frames, with negative frames having the strongest effect. However, in contrast to theories of information demand that would predict more willful ignorance of negatively framed content, negative framing has the same impact regardless of information accessibility. Together, our findings suggest that having to seek ethical certification information leads to a small reduction in the use of certifications to guide choice, but that affective framing has a larger impact on the weight placed on certifications in consumer choices regardless of the accessibility of information.

## 1. Introduction

Information about the impacts of purchases, ranging from labor conditions to environmental footprint, is increasingly accessible with the proliferation of certifications, websites, and apps to help consumers navigate ethical and sustainable options. Such information has important worldwide consequences for efforts to combat forced labor, poverty, and climate change (International Labor Organization and Walk Free Foundation, 2017; Thøgersen and Nielsen, 2016). For example, agriculture is the most relevant sector for poverty reduction in low-income countries and accounts for around one quarter of greenhouse gas emissions (Ivanic and Martin, 2018; Ritchie, 2021). This indicates that a complete understanding of how and whether consumers seek out and weigh this information has critical importance.

Do consumers seek out ethical information? Although people may view ethical impact information as relevant to their decision-making, they may ignore it because it is unpleasant to contemplate or requires making difficult tradeoffs (Golman and Loewenstein, 2018; Grossman and van der Weele, 2017; Sharot and Sunstein, 2020). Indeed, even people who report caring about ethical impacts ignore this information in incentivized binary dictator games (Dana et al., 2007; Vu et al., 2023) and hypothetical purchases (Ehrich and Irwin, 2005; Philipp-Muller

et al., 2022), a phenomenon termed “strategic” or “willful” ignorance. However, the results depend on the experimental context including whether receiving or ignoring information is the default (Grossman, 2014), the presence of additional, non-ethical attributes (Woolley and Risen, 2021) and the ease of processing information (Orquin et al., 2020; Peschel et al., 2019), with some studies failing to find ignorance for environmental causes (Felgendreher, 2018; Lind et al., 2019; Momsen and Ohndorf, 2020). Thus, we still know little about consumers’ attention to or ignorance of ethical information in their daily shopping decisions.

In this paper, we investigate the influence of information accessibility and framing on consumers’ use of ethical certifications by employing realistic scenarios and incentivized product purchases. We use prominent Organic and Fairtrade certifications that have yet to be investigated in the context of willful ignorance (Rousseau, 2015; Sonntag et al., 2023). Further, we explore how behavior is influenced when consumers must actively search for ethical information in competition with information on a variety of other attributes, such as quality and price, weakening the explicit tradeoff between self and ethical impacts that is typical in lab experiments of willful ignorance (Woolley and Risen, 2021). We use an unobtrusive and comprehensive method to precisely measure which information is revealed and for how

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long through MouselabWEB, where information is revealed upon hovering over an information box (Willemsen and Johnson, 2019). Moreover, we test whether the *same* person who uses ethical information when confronted with it, fails to seek it out when required to do so actively. These features reduce self-report or demand biases and study ignorance in a more naturalistic setting closer to actual consumer choices.

Because the role of affect in ignorance is not well understood, we contrast positive (e.g. “help workers”) and negative (“avoid harm to workers”) frames. While negative frames are more effective, they work by producing negative affect (Grankvist et al., 2004; Metzger and Günther, 2019; Van Dam and De Jonge, 2015). Thus, negative framing should also increase affective ignorance (Golman and Loewenstein, 2018; Sharot and Sunstein, 2020). Our in-depth exploration of consumer attention to ethical labels quantifies the net effect of such frames and sheds light on attentional processes in ethical decision-making (Song et al., 2019; Takahashi et al., 2018; Van Loo et al., 2015, 2018).

## 2. Methods

We ran three preregistered studies investigating information-seeking and willful ignorance in consumer choice. In Study 1, we examine how the use of certifications and other attribute information changes depending on whether information is open or hidden in an incentivized lab study. In Study 2, we additionally test how positive or negative affective framing of certification information impacts information-seeking and choice under hidden or open information. Finally, in Study 3 we test the robustness of Study 1 and 2 by making price information always visible to more closely mimic shopping settings and prior studies (Dana et al., 2007; Vu et al., 2023). Study 2 and 3 were both run on representative online samples with hypothetical choices. Because Study 3 acts as a robustness test, the results are reported in the supplementary material. We preregistered our hypotheses for Study 1: <https://aspredicted.org/s5jy-mp4k.pdf>, Study 2: <https://aspredicted.org/w25q-shqv.pdf>, and Study 3: <https://aspredicted.org/b3ch-rb82.pdf>.

### 2.1. Participants

All studies were approved by the Economics and Business Ethics Committee at the University of Amsterdam and received informed consent from participants. In Study 1, 153 participants from the University of Amsterdam CREED Lab participated. One participant was excluded due to a technical issue that prevented them from completing the post-task survey, leaving 152 participants. Participants were paid €7 for participation plus one of their decisions was randomly selected and paid out and they had a 5% chance of a €2 bonus. In Study 2, 902 representative U.S. participants across age, gender, and race were recruited from the online platform Prolific. Due to a programming error, 86 of the participants assigned to the neutral frame saw both neutral and negative frames (if they went back to reread instructions). Because these participants received instructions with multiple frames, we exclude them from analysis, leaving a final sample of 816 participants, with 215 in the neutral frame, 301 in the positive frame, and 300 in the negative frame (see Supplementary Tables 11 & 12 for further robustness tests). Participants were compensated £4 for participation and had a 1% chance of a bonus payment of £8. In Study 3, 302 representative U.S. participants were recruited from Prolific. They were compensated £4 and had a 1% chance of an £8 bonus payment. The additional bonuses (5% chance of €2 in Study 1, 1% chance of £8 in Studies 2 and 3) were included to measure prosociality from optional donations.

### 2.2. Task

Participants in all studies made 42 two-alternative forced choice purchasing decisions between pairs of options. Decisions were always within a consumable item category including chocolate, tea bags, coffee

beans, honey, and chocolate-hazelnut spread. For each decision, participants saw the item category and attribute information about each option. Attribute information included price, International Fairtrade certification, Organic certification, quality star rating,<sup>1</sup> size, and a qualitative description. In Study 1, we used the EU Organic certification and in Studies 2 and 3 the USDA Organic certification to match the location of participants, and we dropped the qualitative description in Studies 2 and 3 as it was the attribute mostly likely to be ignored in Study 1. In the instructions, we defined each attribute including the qualifications for Fairtrade and Organic certifications. Participants were also informed that the absence of certifications meant “no guarantees” and a “higher risk of poor production practices,” to help them infer the meaning of non-certified products without indicating certainty. Brand information was not provided to avoid brand associations or familiarity from interfering with consideration of the other attributes.

All attribute information accurately represented actual products that participants could receive at the end of the study in Study 1 or actual products on the market in Studies 2 and 3. For options where no rating information existed, “no rating” was displayed and these trials were excluded from regression analyses.<sup>2</sup> Prices were unique to the experiment setup and could differ from retail prices (and participants were informed of this). Most decisions featured a tradeoff between a more expensive option with more certifications and a cheaper option with fewer certifications, but some decisions included only certified or only non-certified options. We varied price premiums on the option with more certifications across trials from –15% to 60% in 15% increments to enable an exploration of how price differences between options impacted information-seeking and choice.

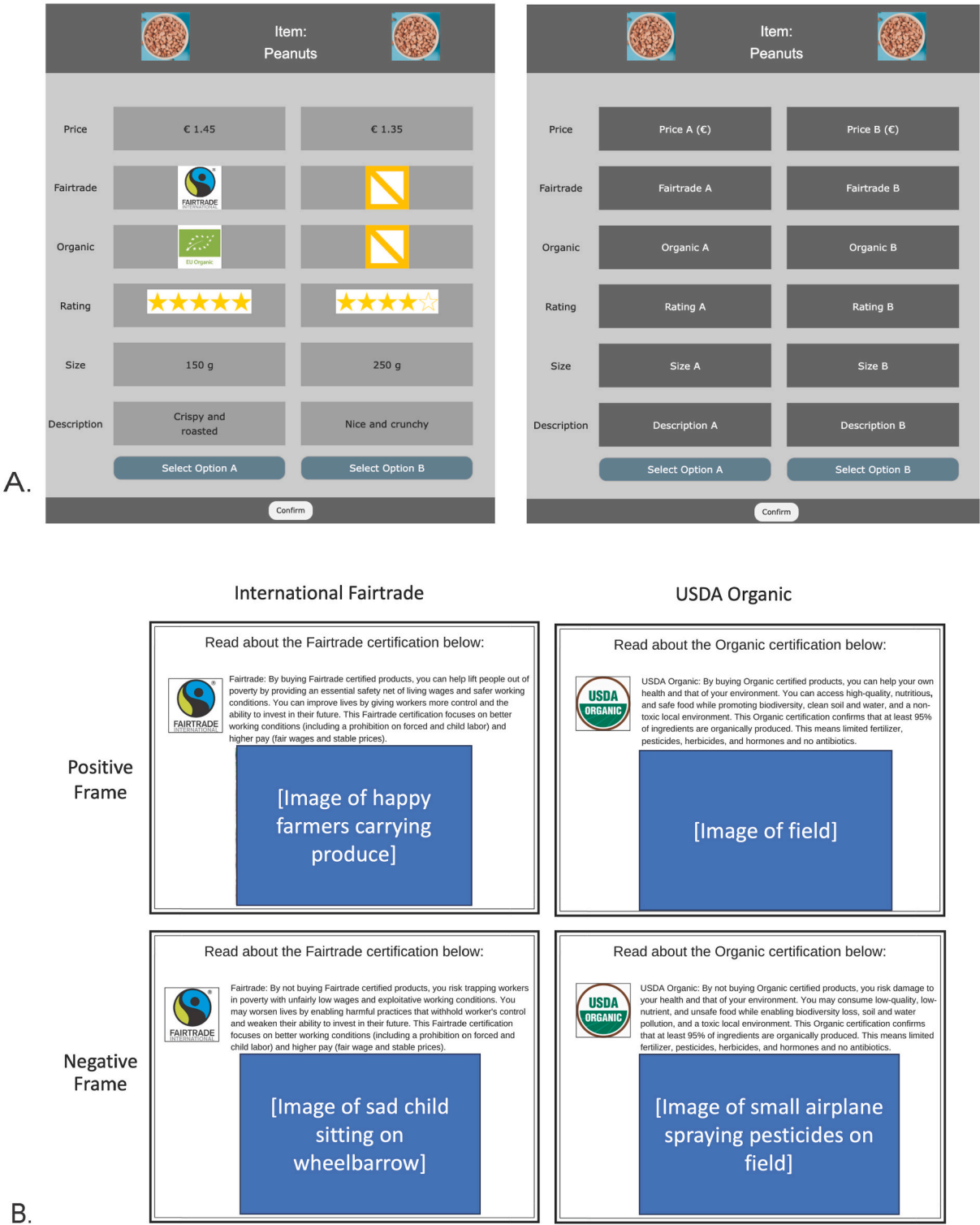
In Study 1, participants had a budget of €10 for each decision. At the end of the experiment, we randomly selected one trial of their 42 choices to pay out. They received the actual item corresponding to their chosen option on that trial, as well as the leftover from their €10 budget after subtracting the price of the chosen option. In Studies 2 and 3, because of the constraints of maintaining privacy on Prolific, decisions were hypothetical and participants were asked to imagine they had a budget of \$10 when making their choice. However, participants received brand and item information from one randomly-selected trial at the end of the study and were informed of the amount that would have been leftover in their \$10 budget.

### 2.3. Information format

For each participant, half of the item categories (e.g., chocolate) had “Open” information where all attributes were visible on the decision screen. The other half of item categories had “Hidden” information in which the attribute information was hidden behind boxes labeled with the attribute type (Fig. 1A). Open and hidden trials were presented in a random order. One exception to the random order was that the first five trials were assigned to either the open or hidden condition between-subjects to account for the impact of early exposure to open or hidden trials. To hide information, we used MouselabWEB which allows participants to reveal attribute information by hovering their mouse over a box of interest which closes when the mouse leaves the box (Willemsen and Johnson, 2019). Any box could be opened for any length of time, but only one box could be opened at a time. This enables us to quantify which information was opened, in which sequence, how many times,

<sup>1</sup> Star ratings were based on consumer testing websites and/or user reviews and participants were informed of this.

<sup>2</sup> These trials were included because they enable simple comparisons of the tradeoff between certifications and price, but they are excluded in most regression analyses because we control for all attributes in regressions. In robustness checks, we included unrated items and assigned them ratings from 1 to 4, finding no impact of these inclusions or different rating values on the use of certifications under hidden information (Supplementary Table 16).



**Fig. 1.** A. Examples of choices with open information (left) or hidden information (right) in Study 1. Study 2 and 3 were almost identical with the Description left out and additional framing reminders next to the certification information. B. Positive and Negative frames for Fairtrade and Organic certifications from Study 2.

and for how long. Of note, all attributes, not only the ethical attributes, were hidden in the hidden condition. This kept the physical cost of hovering to reveal information as similar as possible across attributes so that differences in information-seeking and use can be attributed to psychological motives. In Study 3, price information was always visible even in hidden information trials in which all other attributes were hidden. To control for information order, we varied the position of

ethical certifications in the list of attributes between subjects. All participants viewed price information at the top of the screen, followed by rating, size, and description information in that order (the description attribute was omitted in Studies 2 and 3). Certification information (Fairtrade and Organic, counterbalanced in order) was positioned anywhere from second to the last attribute on the screen.

## 2.4. Affective framing

Study 1 and Study 3 used neutral framing in which the instructions simply defined Fairtrade and Organic certifications. In Study 2, participants were split into three between-subjects framing conditions: neutral, positive, or negative framing.<sup>3</sup> Neutral framing followed the definitions as in Studies 1 and 3. The positive and negative affective frames included additional information about the impacts of the certifications (Fig. 1B). The positive Fairtrade frame included an image of happy farmers and described the benefits to workers; in contrast, the negative Fairtrade frame included an image of a child worker and warned about the risks of harming workers by not buying Fairtrade. The positive Organic frame included an image of a field and additional information about the benefits to health and local environment whereas the negative frame included an image of an airplane spraying pesticides on a field and warned of the negative health and environmental risks (Mie et al., 2017). The images and phrases were chosen based on a pre-test showing that they were perceived significantly differently on positive vs. negative emotions (Supplementary Fig. 1 and Supplementary Table 1). In addition, short phrases were added to the certification attributes on the choice screen. In the neutral frame, the text indicated whether the label meant certified or not certified. In the positive frame, Fairtrade was accompanied by “Improve worker protections” and Organic by “Promote benefits to your health”; for non-certified options in the positive frame the word “Don’t” was added (e.g., “Don’t improve worker protections”). In the negative frame, Fairtrade was accompanied by “Don’t risk worker exploitation” and Organic by “Don’t risk harm to your health”; for non-certified options in the negative frame the word “Don’t” was removed (e.g., “Risk worker exploitation”). These additional frame messages for non-certified options were included to ensure that participants were exposed to the frame whenever they revealed certification information regardless of whether the option was certified or not.

## 2.5. Post-task surveys

After the decision task, participants completed surveys asking about their approach to the task, attitudes toward ethical consumption and general prosocial behavior, as well as demographic information. We asked participants their strategy for making their choices, and whether it differed by hidden vs. open information. Participants rated the importance of each attribute in their decisions and their liking and consumption frequency for each item-category.<sup>4</sup> We asked participants how likely each of two options was to be certified for price premiums of 30%, 45%, and 60% to check for associations of price and certification (Study 1 only). We also asked participants their willingness to pay over €1 (or \$1 in Studies 2 and 3) for Organic and Fairtrade certified items. To measure incentivized prosocial tendencies, participants had a small chance of receiving an extra bonus (5% chance of €2 in Study 1, 1% chance of €8 in Studies 2 and 3), and they were asked how much they would donate to charity if they received the bonus. In Study 1, they could donate up to €1 each to a charity addressing environmental issues (Coalition for Rainforest Nations) and a charity addressing poverty (Give Directly). In Studies 2 and 3, they could donate up to €8 to Give Directly. In our analyses, we examine importance ratings, price premiums, and donations.

Participants also rated familiarity, trust, associations with health, quality, and expensiveness, guilt over not buying, and moral obligation to buy Organic and Fairtrade certified options. In Study 2, we asked

participants to rate on a scale of 1–7 how happy, hopeful, proud, sad, guilty or angry thinking about Organic and Fairtrade certifications, respectively, made them feel to examine how our affective frames impacted emotions. We included a number of surveys to measure ethical concerns and consumption habits, including ethical concerns about environment and labor, perceived consumer efficacy with regard to labor and environmental issues, and frequency of ethical purchasing as well as empathic concern (Davis, 1980; Grunert et al., 2014; Lades et al., 2020; Roberts, 1996). Finally, participants reported demographic characteristics, including age, gender, race, ethnicity, political leaning, education level, and income level. In our analyses, we focus on ratings related to the certifications and general ethical concerns, with an exploration of demographics in the supplement (Supplementary Table 13).

## 2.6. Analysis

Preprocessing of the MouseLabWEB data involved filtering out attribute reveals of <200 ms (Willemssen and Johnson, 2019). Trials that were not recorded due to a technical issue or with multiple presses of the submit button (potentially due to issues with the server) in which the choice reversed are excluded.<sup>5</sup>

R-studio was used for analysis. Regressions with clustered standard errors were run using the *estimatr* package, *lm\_robust* function (Blair et al., 2024). Figures were created with *ggplot2* and tables were created using the *modelsummary* package (Arel-Bundock, 2022; Wickham, 2009). To standardize price and size attributes across items, the proportional instead of absolute difference was used in regressions. We also standardize attention metrics by including both average attention at the individual level and trial-wise fluctuations to include different aspects of attention (Hirmas et al., 2024). Note that in the preregistration for Study 1, we specified logistic regressions for the analyses; however, for ease of interpretation, we include linear probability regressions in the main text and corresponding logistic regressions are reported in the supplementary material with any differences mentioned in the main text (Gomila, 2021).

## 2.7. Data availability

All data and code to reproduce the analysis are available on the Open Science Framework (OSF) platform: <https://osf.io/ha86g/>.

## 3. Theoretical background and hypotheses

### 3.1. Information seeking and ignorance motives

Information is crucial to understanding the consequences of our choices, but with a constant stream of information and limited attention, people must decide which information to seek out and which to ignore. Research across Cognitive Neuroscience, Psychology, and Economics has converged on three motives that influence information-seeking and avoidance: instrumental, affective, and curiosity motives (Golman et al., 2022; Golman and Loewenstein, 2018; Sharot and Sunstein, 2020). Instrumental motives push people to seek actionable, decision-relevant, and ignore irrelevant information. Cognitive curiosity motivates uncertainty reduction and more broadly understanding. Affective motives lead people to seek positive, and ignore negative, information to regulate their emotions and maintain self-image. Negative content creates a tension between affective ignorance and instrumental or curiosity-

<sup>3</sup> Supplementary Table 2 displays the age, gender, and race demographics across conditions.

<sup>4</sup> In Study 1, the first 3 sessions (45 participants) contained a programming error in the difference question so that “no difference” was always recorded regardless of the choice, and the item-category question was added after, so this information is only available for the latter 107 participants.

<sup>5</sup> Trials not recorded due to a technical issue account for <0.5% of trials in Study 1 and 3, and 1.2% of trials in Study 2. The choice reversal exclusion criteria led to the exclusion of 0 trials in Study 1, 11 trials in Study 2, and 1 trial in Study 3. All participants have >80% of trials remaining after these exclusions.



driven information-seeking (Niehoff and Oosterwijk, 2020; Oosterwijk et al., 2020); for example, people may ignore potentially threatening medical test results but have an instrumental need to know this information (Hertwig and Engel, 2016). Similarly, consumers may view sustainability information as relevant, but ignore it because it is unpleasant to contemplate or could lead to difficult tradeoffs with price (Ehrich and Irwin, 2005).

### 3.2. Information seeking and ignorance in consumer choice

A large literature probes consumer preferences for information. One line of research directly asks participants which information they want to know or avoid. For example, one survey found the highest desire and willingness to pay to either seek or avoid health information, with lower interest in sustainability information (Reisch et al., 2021). Nevertheless, research on meat consumption has found that those who decline to learn about carbon impacts or farm animal welfare adjust their behavior when exposed to it, providing evidence of active ignorance (Edenbrandt et al., 2021; Epperson and Gerster, 2021; Onwezen and van der Weele, 2016). While directly asking participants what they want to know can be helpful, it presents concerns such as demand effects and social desirability. Creating settings where consumers can naturally seek or ignore information may measure willful ignorance that consumers prefer not to declare.

Most research on such “willful” or “strategic” ignorance, especially in Economics, focuses on tradeoffs between self-interest and another’s interest (Dana et al., 2007). A meta-analysis of such studies found that 40% of participants choose not to reveal the impact of their choice on others and make 16% more selfish choices when information is hidden (Vu et al., 2023). Ignorance in these scenarios has been attributed to self-image maintenance, conflict avoidance, or inattention, with some evidence for reduced avoidance when the impact on others is higher (Exley and Kessler, 2023; Feiler, 2014; Grossman and van der Weele, 2017). Indeed, studies on potentially more deserving environmental causes found mixed evidence for ignorance, although a recent meta-analysis found no effect of recipient type (Felgendreher, 2018; Lind et al., 2019; Momsen and Ohndorf, 2020; Moyal and Schurr, 2022; Vu et al., 2023).

Instead of the direct tradeoff between self and recipients discussed above, another strand of literature employs rich, multi-attribute scenarios with less obvious tradeoffs. One of the earliest studies required participants to request each attribute in hypothetical decisions, finding that participants under-requested ethical information relative to its weight in choice, and this effect was stronger for those who cared more about the cause (Ehrich and Irwin, 2005). Further, including additional attributes that vary between options leads to ignorance of ethical information because these extra attributes provide “cover” for willful ignorance by reducing conflict or guilt about choosing more appealing but less ethical options (Woolley and Risen, 2021). These multi-attribute decisions are also more reflective of consumer purchasing decisions which often feature many competing attributes with a less salient ethical tradeoff.

Given the broad evidence for some level of ignorance in consumer decisions, we anticipated that hidden information would reduce ethical choices. Further, since ignorance may be motivated by avoiding conflict, decisions with large price differences between options should generate more conflict and further reduce ethical choices.

**H1.** *There will be a lower weight on ethical information in hidden information trials compared to open information trials (Studies 1, 2, 3).*

**H2.** *As the price difference between options increases, the likelihood of choosing the ethical option will decrease more for hidden compared to open trials (Study 1).*

Past work on willful ignorance measured binary requests or button clicks, whereas studies that measure visual attention using eye-tracking

have examined more continuous, naturalistic measures of information-seeking in consumer choice. These studies find that higher sustainability preferences may increase attention to ethical information, but also that information salience, centrality, and size all play an important role (Orquin et al., 2020; Peschel et al., 2019; Takahashi et al., 2018; Van Loo et al., 2015). However, few of these papers quantify ignorance in more realistic settings where all information is available. One exception is Song et al., 2019 who use eye-tracking glasses in a grocery and find that only 2% of eco-labels are observed, which they attribute to habitual shopping. In our study, participants hover their mouse over boxes to reveal attribute information without requiring active requests or clicks. This enables us to cleanly identify binary reveal/ignore behavior to investigate willful ignorance as well as measuring continuous information-gathering similarly to eye-tracking to explore attention as a moderator of information use in choice (Van Loo et al., 2018; Willemsen and Johnson, 2019). Because conflict is expected to lead to more ignorance, we anticipate that larger price differences between options will induce higher conflict and reduced attention to ethical certifications.

**H3.** *As the price difference between options increases, attention to certification information will decrease in hidden information trials (Study 1).*

### 3.3. Positive and negative framing in information avoidance

Research across many domains indicates that negative frames are more impactful than positive frames in choice. Framing can be purely a matter of giving reference points, in which loss framing leads to more extreme responses (Tversky and Kahneman, 1981). Similarly, emotions related to losses weigh more heavily in choice than those related to gains (Charpentier et al., 2016). Negative framing focusing on the harms of not acting ethically can also lead to stronger prosocial responses than focusing on the benefits of acting ethically as seen in negative framing of donations to “prevent deaths” leading to more or larger donations than positive “save lives” framing (Chou and Murnighan, 2013; Metzger and Günther, 2019). In consumer decisions, negative framing of ethical attributes has a stronger impact on consumers’ use of ethical information (Philipp-Muller et al., 2022).

Consumer product certifications are usually opted-into by companies and therefore are positively framed to indicate the presence of ethical products rather than highlighting unethical products or the negative consequences of not choosing an ethical product. Government regulations focused on health have shifted toward full-spectrum traffic-light labels or negative warning labels such as Chilean stop sign labels, but these are rarer for ethical impacts (Ares et al., 2023; Thøgersen and Nielsen, 2016). Despite its rarity, negative framing by labeling the most environmentally harmful products has been shown to have a stronger impact on ethical considerations in choice compared to positive framing (Grankvist et al., 2004; Van Dam and De Jonge, 2015).

Here, we frame the impacts of choice, with negative framing focusing on the harmful impacts of failing to act ethically toward workers or the environment, similarly to the “preventing death” framing in charity decisions. The above findings suggest that negative framing will have a stronger impact than positive framing.

**H4.** *In open trials, negatively-framed Fairtrade<sup>6</sup> information will have more weight in choice compared to positive or neutral framing (Study 2).*

While negative framing often leads to stronger impacts, there is also potential for negative information to trigger affective ignorance motives, leading to it backfiring. Whether negative framing leads to stronger responses or backfires depends on many factors, including

<sup>6</sup> In hypotheses 4–6, which were developed for Study 2, we focused on Fairtrade instead of both certifications because we found evidence for willful ignorance of Fairtrade certifications in Study 1. However, we discuss findings for both certifications.

whether information is avoidable and people's sense of efficacy to solve the issue, as studied extensively in health communication (Peters et al., 2013; Tannenbaum et al., 2015). The impact of affective framing in ethical or sustainable behavior lacks definitive evidence, with some suggestions that negative appeals can backfire when overly strong or explicit but are otherwise effective (Gifford and Bernard, 2004; Pelozo et al., 2013; White et al., 2019). Indeed, studies on framing in charitable giving found that negative frames reduced information-seeking as indicated by less time spent on the donation page or marginally lower information demand even when negative framing led to more charitable behavior, but negative framing led to increased information-seeking for carbon offsets (Metzger and Günther, 2019; Momsen and Ohndorf, 2020; Serra-Garcia and Szech, 2022).

One possible reason for such mixed results is that most studies examine framing in contexts where it may not be possible to ignore the information, so backfiring is viewed in terms of defensiveness or dismissiveness toward the information. To address this, we compare a setting in which participants can easily ignore information to one in which they cannot. Combining the potential for negative framing to backfire with evidence of affective ignorance from the information motives literature, we hypothesize that participants will seek ethical information less and use it less in their choices under negative framing when information is hidden (Golman et al., 2022; Sharot and Sunstein, 2020). This will help resolve the open debate on the efficacy of negative framing on ethical behavior.

**H5.** In hidden information trials, negatively-framed Fairtrade information will have less weight in choice compared to positive or neutral framing (Study 2).

**H6.** In hidden trials, negatively-framed Fairtrade information will receive less attention compared to positive or neutral framing (Study 2).

## 4. Results

### 4.1. Use of certifications under open vs. hidden information

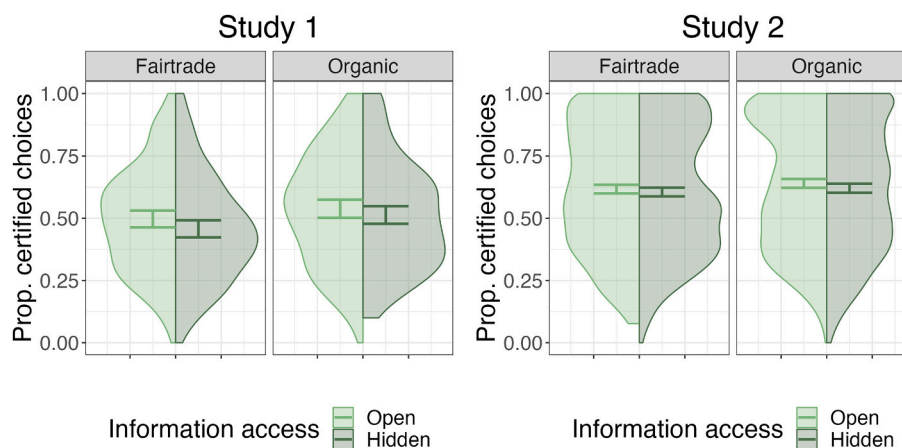
We hypothesized that the ability to ignore information would reduce the use of ethical certifications (H1). Indeed, there was a small reduction in the raw proportion of Fairtrade and Organic choices under hidden relative to open information for both Studies 1 and 2 (Fig. 2). In Study 1, in which participants made decisions in the lab, there was a significantly lower weight on Fairtrade certifications under hidden information (Table 1, column 1 Hidden x Fairtrade  $b = -0.04$ ,  $p = 0.010$ ; column 2 Hidden  $b = -0.05$ ,  $p < 0.001$ ), but no difference for Organic certifications (column 1 Hidden x Organic  $b = -0.01$ ,  $p = 0.49$ ; column 3 Hidden  $b = -0.03$ ,  $p = 0.11$ ), so H1 was supported only for Fairtrade

certifications. In Study 2, in which participants made choices online, there was no difference for Fairtrade under hidden information (Table 3, column 1 Hidden x Fairtrade  $b = -0.01$ ,  $p = 0.16$ ; column 2 Hidden  $b = -0.01$ ,  $p = 0.11$ ), but a significant reduction in weight on Organic certifications (column 1 Hidden x Organic  $b = -0.02$ ,  $p = 0.009$ ; column 3 Hidden  $b = -0.02$ ,  $p = 0.004$ ). Supplementary Tables 3 and 4 confirm the significant reductions on Fairtrade in Study 1 and Organic in Study 2 with logistic regressions. Further, Study 3 replicates the findings from Study 2 in a setting where price information was always available (Supplementary Fig. 5 and Supplementary Table 17). Examining the impact of hidden information on the other attributes, there is a reduction in the weight on size information in Study 1 (Table 1, column 1, Hidden x Size  $b = -0.08$ ,  $p = 0.004$ ), but no other impacts of hidden information on other attributes, suggesting the physical barrier of hidden information cannot account for the reduction in certification use. All studies showed a reduction in certification use under hidden information, but only significantly for Fairtrade certifications in Study 1 and only significantly for Organic certifications in Studies 2 and 3, so the reduction was not universal or specific to one certification. We discuss potential reasons for these mixed findings in the discussion.

### 4.2. Impact of price differences on information-seeking and use of certified information

Next, we tested whether higher price differences between options led to ethical purchases decreasing more under hidden versus open information (H2). There was a significant negative interaction between price and hidden for Organic choices (Table 1, column 6 Hidden x Price  $b = -0.14$ ,  $p = 0.02$ ), but not for Fairtrade choices (column 5 Hidden x Price  $b = -0.05$ ,  $p = 0.31$ ), and not for either certification in 3-way interactions predicting left versus right choices (column 4 Hidden x Price x FT  $b = -0.04$ ,  $p = 0.54$ ; Hidden x Price x Org  $b = -0.07$ ,  $p = 0.22$ ). This suggests that there was not a robust steeper decrease in the weight on certified information for higher price differences under hidden information.

We also hypothesized that as the price difference between options increased, participants would seek certification information less (H3). To test this, we examine three attention metrics, including time spent on attributes, the number of times information was revealed, and ignorance (not revealing either option for a given attribute). In accordance with H3, higher price differences led to a reduction in information-seeking for Fairtrade and Organic information in terms of time spent on the attributes and the number of times the information was opened and an increase in ignorance (Supplementary Fig. 2, Table 2). However, we observe a similar pattern for all attributes such that as the price difference goes up, attributes are sought less, except for price which garners



**Fig. 2.** The proportion of Fairtrade and Organic certified choices under open and hidden information conditions in Studies 1 and 2. The error bars indicate the 95% confidence intervals, and the shaded areas show the distribution.

**Table 1**  
Study 1 linear probability regressions of choice.

	Choice LR (1)	Choice FT (2)	Choice Org (3)	Choice LR (4)	Choice FT (5)	Choice Org (6)
Intercept	0.48*** (0.01)	0.73*** (0.02)	0.63*** (0.02)	0.48*** (0.01)	0.72*** (0.02)	0.62*** (0.02)
Price	−0.79*** (0.04)	−0.87*** (0.04)	−0.76*** (0.04)	−0.79*** (0.04)	−0.84*** (0.04)	−0.69*** (0.05)
Rating	0.10*** (0.01)	0.11*** (0.01)	0.08*** (0.01)	0.10*** (0.01)	0.11*** (0.01)	0.08*** (0.01)
Fairtrade	0.20*** (0.01)		0.16*** (0.02)	0.20*** (0.01)		0.16*** (0.02)
Organic	0.14*** (0.02)	0.11*** (0.01)		0.14*** (0.02)	0.11*** (0.01)	
Size	0.29*** (0.02)	0.27*** (0.02)	0.21*** (0.02)	0.29*** (0.02)	0.27*** (0.02)	0.21*** (0.02)
Price x Fairtrade				0.07 <sup>+</sup> (0.04)		
Price x Organic				−0.01 (0.04)		
Hidden	0.01 (0.01)	−0.05*** (0.01)	−0.03 (0.02)	0.02 (0.01)	−0.04* (0.02)	0.00 (0.02)
Hidden x Price	−0.07 <sup>+</sup> (0.04)			−0.07 <sup>+</sup> (0.04)	−0.05 (0.05)	−0.14* (0.06)
Hidden x Rating	0.00 (0.02)			0.00 (0.02)		
Hidden x Fairtrade	−0.04** (0.02)			−0.04** (0.02)		
Hidden x Organic	−0.01 (0.02)			−0.01 (0.02)		
Hidden x Size	−0.08** (0.03)			−0.08** (0.03)		
Hidden x Price x Fairtrade				−0.04 (0.06)		
Hidden x Price x Organic				−0.07 (0.05)		
Obs.	4935	2729	2729	4935	2729	2729
R <sup>2</sup> Adj.	0.312	0.307	0.251	0.312	0.306	0.252

Notes: All models are linear probability regressions with standard errors clustered at the individual level from Study 1:  $N = 152$ . Choice LR compares left versus right options; Choice FT compares Fairtrade versus not certified options; Choice Org compares Organic vs. not certified options. Gender and (centered) age are included as controls, but not displayed. <sup>+</sup>  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

**Table 2**  
Linear regressions of attention and interactions with price.

	Prop. dwell time (1)	Prop. info opens (2)	Ignorance (3)
Intercept	0.15*** (0.00)	0.16*** (0.00)	0.06*** (0.02)
Price	−0.04*** (0.01)	−0.04*** (0.01)	0.12*** (0.03)
Att. Price	0.16*** (0.01)	0.13*** (0.01)	−0.06*** (0.01)
Att. Fairtrade	−0.04*** (0.00)	−0.03*** (0.00)	0.02 (0.01)
Att. Organic	−0.04*** (0.00)	−0.03*** (0.00)	0.02 (0.01)
Att. Size	0.01* (0.01)	0.01 (0.01)	0.00 (0.01)
Att. Description	0.02** (0.01)	−0.03*** (0.01)	0.04*** (0.01)
Price x Att. Price	0.21*** (0.02)	0.16*** (0.02)	−0.11*** (0.03)
Price x Att. Fairtrade	0.00 (0.01)	0.00 (0.01)	−0.02 (0.02)
Price x Att. Organic	0.01 (0.01)	0.01 (0.01)	0.00 (0.02)
Price x Att. Size	0.00 (0.01)	0.01 (0.01)	−0.01 (0.02)
Price x Att. Description	0.02 (0.01)	0.03** (0.01)	−0.06* (0.03)
Obs.	18,468	18,468	18,468
R <sup>2</sup> Adj.	0.373	0.342	0.034

Notes: Data are from Study 1. All models are linear regressions with standard errors clustered at the individual level ( $N = 152$ ). Each column has a different attention metric: Prop. dwell time is the proportion of time spent on each attribute, Prop. info opens the proportion of times an attribute was revealed. Ignorance means an attribute was not revealed. Rating is the reference attribute. Gender and (centered) age are included as controls, but not displayed. <sup>+</sup>  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

more attention with increasing difference and is almost never ignored, so this pattern is not unique to ethical attributes.

#### 4.3. Framing and open vs. hidden information on the use of certified information

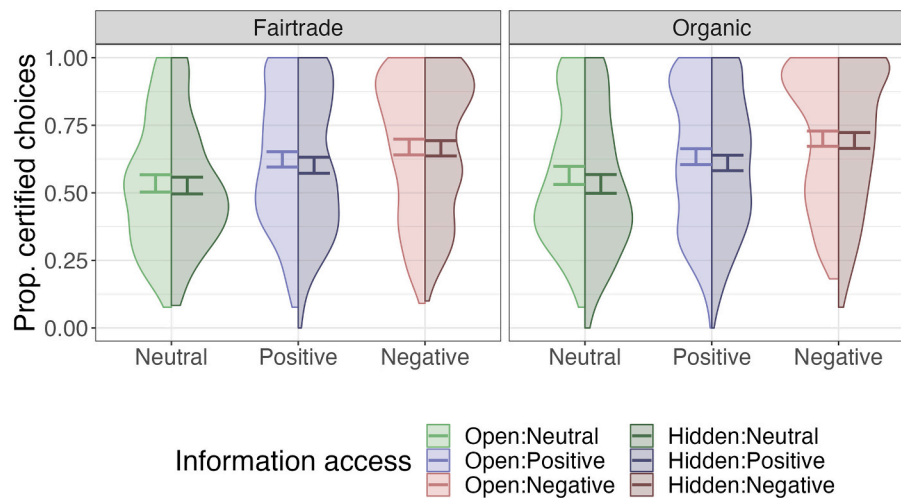
In Study 2, we manipulated the affective framing (positive, negative, or neutral) of the certifications to probe the role of affect in the use of

certification information. We tested this when participants were either confronted with open information or when it was hidden and they could ignore it. We hypothesized that negative framing would increase the weight on Fairtrade information in choice under open information, (H4) but decrease its weight under hidden information (H5). We find that negative framing leads to higher weights on both certifications compared to positive framing (Fig. 3; Table 3, column 1 Negative x Fairtrade  $b = 0.04$ ,  $p = 0.02$ ; column 2 Negative  $b = 0.05$ ,  $p = 0.004$ ; column 1 Negative x Organic  $b = 0.06$ ,  $p < 0.001$ ; column 3 Negative  $b = 0.08$ ,  $p < 0.001$ ) whereas neutral framing reduces the weight on certifications relative to positive framing (column 1 Neutral x Fairtrade  $b = -0.07$ ,  $p < 0.001$ ; column 2 Neutral  $b = -0.08$ ,  $p < 0.001$ ; column 1 Neutral x Organic  $b = -0.06$ ,  $p = 0.003$ ; column 3 Neutral  $b = -0.07$ ,  $p < 0.001$ ).

However, there are no significant differences in weights on certifications between open and hidden information; rather, negative framing increases the weight on certifications regardless of open or hidden information (Table 3, columns 4–6). Therefore, the evidence supports H4 that negative frames increase the weight on certifications under open information, but this also holds for hidden information, contradicting H5 and suggesting that the ability to ignore hidden information does not reduce the weight on negatively-framed information.

#### 4.4. The effect of framing on information-seeking and ignorance

To test whether negative framing reduces attention to certifications under hidden information (H6), we examine how framing impacts our attentional measures. We find that negative framing leads to significantly *more* seeking of Fairtrade and Organic information as measured by dwell time and the proportion of times each box was opened (Fig. 4, Table 4, columns 1–4 all significant coefficients on Negative). This is consistent with our finding that negative framing increases the weight on Fairtrade and Organic regardless of open or hidden information. Further, we find similar levels of ignorance for positive and negative frames, but higher ignorance under neutral framing, marginally for Fairtrade (Table 4, column 5 Neutral  $b = 0.04$ ,  $p = 0.07$ ) and significantly for Organic (column 6 Neutral  $b = 0.04$ ,  $p = 0.04$ ), also contradicting H6. Overall, we find that negative framing increases seeking of certification information and both positive and negative frames reduce ignorance relative to neutral framing.



**Fig. 3.** The proportion of Fairtrade and Organic certified choices under neutral, positive, or negative framing and open or hidden information. Error bars indicate 95% confidence intervals and shaded areas show the distribution.

**Table 3**  
Study 2 linear probability regressions of choice.

	Choice LR (1)	Choice FT (2)	Choice Org (3)	Choice LR (4)	Choice FT (5)	Choice Org (6)
Intercept	0.49*** (0.00)	0.74*** (0.02)	0.75*** (0.01)	0.49*** (0.01)	0.74*** (0.02)	0.75*** (0.02)
Price	−0.78*** (0.02)	−0.75*** (0.02)	−0.74*** (0.02)	−0.78*** (0.02)	−0.75*** (0.02)	−0.74*** (0.02)
Rating	0.17*** (0.01)	0.15*** (0.01)	0.13*** (0.01)	0.17*** (0.01)	0.15*** (0.01)	0.13*** (0.01)
Fairtrade	0.26*** (0.01)		0.17*** (0.01)	0.26*** (0.01)		0.17*** (0.01)
Organic	0.25*** (0.01)	0.18*** (0.01)		0.25*** (0.01)	0.18*** (0.01)	
Size	0.62*** (0.04)	0.54*** (0.04)	0.67*** (0.04)	0.62*** (0.04)	0.54*** (0.04)	0.67*** (0.04)
Negative	0.01 (0.01)	0.05** (0.02)	0.08*** (0.02)	0.02* (0.01)	0.05* (0.02)	0.07*** (0.02)
Neutral	0.00 (0.01)	−0.08*** (0.02)	−0.07*** (0.02)	0.01 (0.01)	−0.08*** (0.02)	−0.07** (0.02)
Negative x Fairtrade	0.04* (0.02)			0.03+ (0.02)		
Neutral x Fairtrade	−0.07*** (0.02)			−0.07*** (0.02)		
Negative x Organic	0.06*** (0.02)			0.06*** (0.02)		
Neutral x Organic	−0.06** (0.02)			−0.05** (0.02)		
Hidden	0.01 (0.00)	−0.01 (0.01)	−0.02** (0.01)	0.02** (0.01)	−0.01 (0.01)	−0.02+ (0.01)
Hidden x Negative				−0.03* (0.01)	0.01 (0.01)	0.01 (0.01)
Hidden x Neutral				−0.02+ (0.01)	0.00 (0.02)	0.00 (0.02)
Hidden x Price	0.02 (0.02)			0.02 (0.02)		
Hidden x Rating	0.00 (0.01)			0.00 (0.01)		
Hidden x Fairtrade	−0.01 (0.01)			−0.01 (0.01)		
Hidden x Organic	−0.02** (0.01)			−0.02+ (0.01)		
Hidden x Size	0.03 (0.06)			0.03 (0.06)		
Hidden x Negative x Fairtrade				0.01 (0.02)		
Hidden x Negative x Organic				0.01 (0.01)		
Hidden x Neutral x Fairtrade				0.01 (0.02)		
Hidden x Neutral x Organic				0.00 (0.02)		
Obs.	31,054	16,938	17,298	31,054	16,938	17,298
R <sup>2</sup> Adj.	0.293	0.238	0.231	0.294	0.238	0.231

Notes: All models are linear probability regressions with standard errors clustered at the individual level from Study 2:  $N = 816$ . Choice LR compares left versus right options; Choice FT compares Fairtrade versus not certified options; Choice Org compares Organic vs. not certified options. Gender and (centered) age are included as controls, but not displayed. +  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

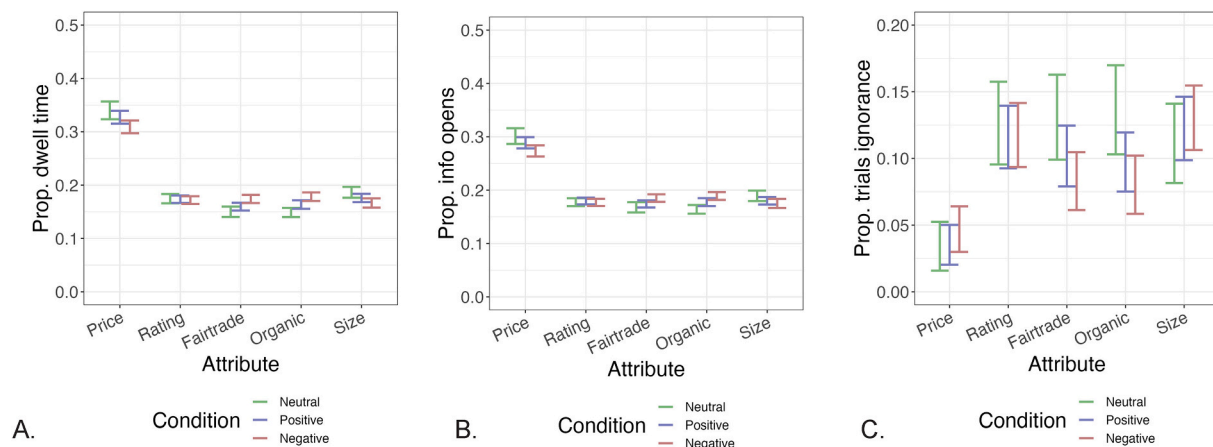
#### 4.5. Impact of information-seeking on use of certified information in choice

In addition to investigating how price differences and affective framing impact information-seeking and ignorance, we can also explore the role of attention in choice. Attention can act as a moderator, with more attention amplifying the impact of attributes in choice. Including information-seeking and ignorance as moderators of certification information in our linear probability regressions of choice provides evidence that these attention measures significantly influence the weight on certification information. This is the case for both individual differences in average attention as well as trial-level fluctuations in attention (Study 1 Supplementary Table 5, Study 2 Supplementary Table 6, and Study 3 Supplementary Table 18, columns 2–3, 5–6, 8–9, Indiv. Att.

Fairtrade and Indiv. Att. Organic all  $ps < 0.001$ , Trial Att. Fairtrade and Trial Att. Organic all  $ps < 0.05$  except Study 1 Fairtrade ignorance with  $p = 0.07$ ). In Fig. 5, we plot the proportion of certified choices in relation to the price premium, comparing open and hidden trials based on whether participants revealed certification information (see also Supplementary Fig. 6 for Study 3). This illustrates the impact of ignorance on choice, showing a dramatic reduction in certified choices and a stronger price-sensitivity in trials where certification information is ignored.

We also control for individual differences in the overall proportion of ignorance in hidden trials to examine how this relates to overall choices under hidden and open conditions. This reveals that individuals who more frequently ignore certification information tend to make fewer certified choices even under open information, perhaps because they do





**Fig. 4.** Average A. Proportion of dwell time on each attribute, B., Proportion of times attribute information boxes were revealed, and C. ignorance of each attribute for Neutral, Positive, and Negative framing under hidden information. Error bars represent 95% confidence intervals.

**Table 4**

Linear regressions of attention including framing condition.

	Prop. dwell FT (1)	Prop. dwell Org (2)	Prop. info opens FT (3)	Prop. info Opens Org (4)	Ignore FT (5)	Ignore Org (6)
Intercept	0.15*** (0.00)	0.16*** (0.00)	0.17*** (0.00)	0.17*** (0.00)	0.10*** (0.01)	0.10*** (0.01)
Neutral	-0.01* (0.01)	-0.01* (0.01)	-0.01+ (0.01)	-0.01* (0.01)	0.04+ (0.02)	0.04* (0.02)
Negative	0.02** (0.01)	0.02** (0.01)	0.01* (0.00)	0.01** (0.01)	-0.02 (0.02)	-0.02 (0.02)
Obs.	16,541	16,541	16,541	16,541	16,541	16,541
R <sup>2</sup> Adj.	0.015	0.015	0.012	0.014	0.006	0.008

Notes: Data are from Study 2. All models are linear regressions with standard errors clustered at the individual level ( $N = 816$ ). Prop. dwell time is the proportion of time spent on each attribute, Prop. info opens is proportion of times an attribute was revealed, Ignore means an attribute wasn't revealed at all. FT stands for Fairtrade and Org for Organic. The Positive frame is the reference condition. Gender and (centered) age are included as controls, but not displayed. +  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

not find it relevant (Supplementary Table 7, Study 1 and Study 2, Fairtrade and Organic Prop. ignorance bs in range  $[-0.42, -0.37]$ , all  $ps < 0.001$ ). Further, there does not seem to be a prominent subset of “willful ignorers” driving the effect. This would appear as a cluster of individuals who place a high weight on open certified information but ignore and markedly reduce the weight placed on certified information when it is hidden (Supplementary Fig. 3). Instead, there are smaller reductions in certified choices under hidden information across many participants, likely from trial-level ignorance as shown in the earlier attention analyses.

#### 4.6. Perceptions of Fairtrade and Organic labels

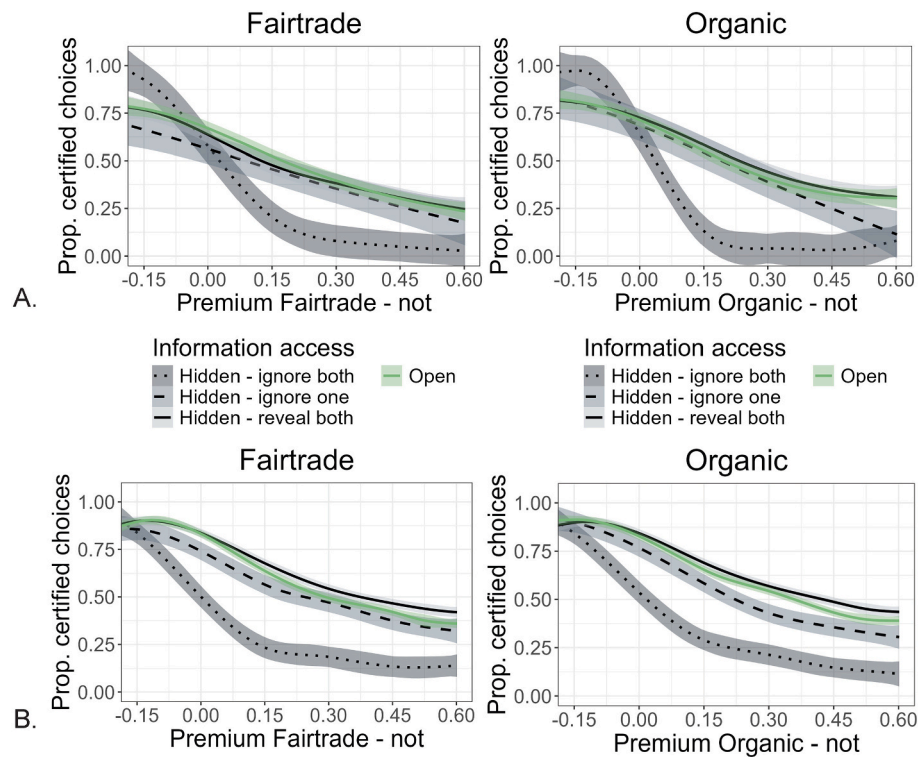
While both Fairtrade and Organic labels could be viewed as ethically relevant, we find evidence in Study 1 that Organic certifications are viewed as more personally beneficial whereas Fairtrade certifications are viewed as more morally-relevant (Fig. 6A). In post-task surveys, participants associated Organic labels more with health (Supplementary Table 8, column 6 Organic  $b = 1.79$   $p < 0.001$ ) and quality (column 7 Organic  $b = 0.70$ ,  $p < 0.001$ ) than Fairtrade, suggesting they perceive it as beneficial to themselves. On the other hand, participants rate feeling more guilt (column 8 Organic  $b = -0.55$ ,  $p < 0.001$ ), and a higher moral obligation to buy Fairtrade (column 9 Organic  $b = -0.39$ ,  $p = 0.003$ ) and donate more to a poverty-focused charity than an environmental

one (column 11 Organic  $b = -0.10$ ,  $p < 0.001$ ). All differences reported pass Bonferroni correction for other survey item comparisons (11 survey items,  $\alpha = 0.0045$ ). This finding led us to emphasize the impact of Fairtrade certifications on workers and the impact of Organic certifications on one's own health and local environment to compare the impact of framing on information-seeking for these different motives in Study 2.

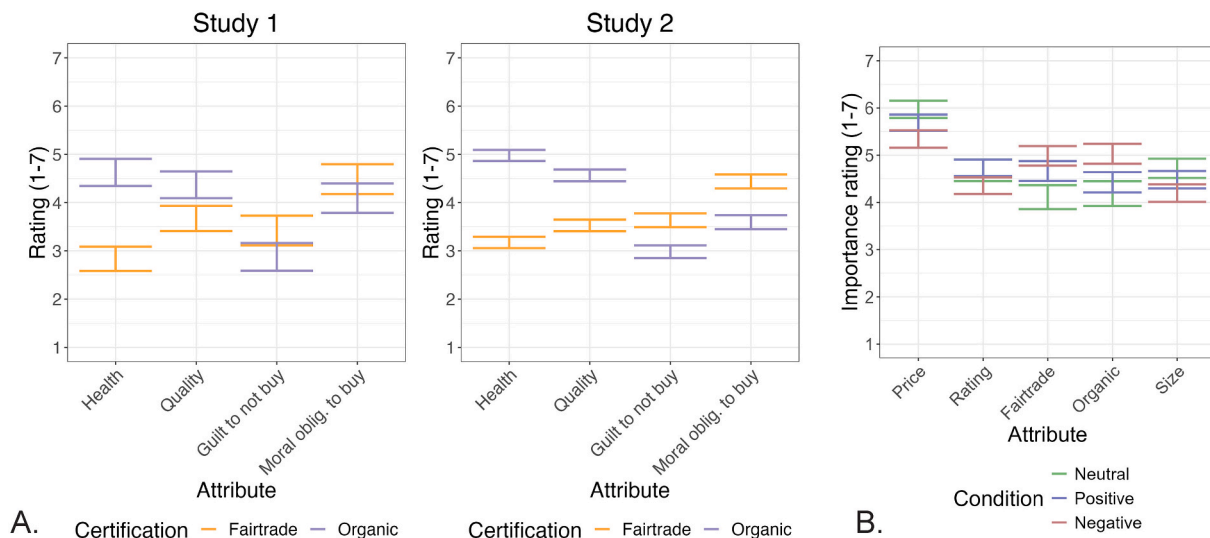
In Study 2, we examine the same survey items for Fairtrade and Organic as in Study 1, with the exclusion of differences in donations as we only offer one donation option in Study 2. We robustly replicate our findings from Study 1 that Organic certifications are perceived as healthier (Supplementary Table 9, column 6 Organic  $b = 1.80$ ,  $p < 0.001$ ) and higher quality (column 7 Organic  $b = 1.04$ ,  $p < 0.001$ ) than Fairtrade, and that participants rate a higher sense of guilt (column 8, Organic  $b = -0.65$ ,  $p < 0.001$ ) and moral obligation (column 9 Organic  $b = -0.84$ ,  $p < 0.001$ ) to buy Fairtrade, and unlike Study 1, we also find higher concerns about labor vs. environment (column 10 Organic  $b = -0.86$ ,  $p < 0.001$ ) (all results pass Bonferroni correction for 10 survey items,  $\alpha = 0.005$ ). Further, in Study 2 we collected additional specific emotion ratings when thinking about each of the certifications, including sadness, anger, and guilt as negative emotions, and happiness, hope, and pride as positive emotions to better understand the influence of framing. We find that negative framing leads to significantly higher sadness ratings (Supplementary Table 10, column 1 Negative  $b = 0.45$ ,  $p < 0.001$ ), but all other emotions are not significantly different between frames when correcting for multiple comparisons (6 items,  $\alpha = 0.0083$ ). In Study 2, we further explore the impact of affective framing on perceptions of certifications. We find that negative framing leads to higher importance ratings for Organic and Fairtrade relative to positive framing (Fig. 6B; Supplementary Table 9, column 1 Negative  $b = 0.48$ ,  $p < 0.001$ ). This suggests that negative framing in particular emphasizes the importance of the certifications, a finding that fits with the attentional data showing that negative framing leads to more certification information-seeking. However, we do not find differences in trust (column 4, Negative  $b = 0.07$ ,  $p = 0.54$ ) or perceptions of consumer efficacy (column 11, Negative  $b = -0.20$ ,  $p = 0.47$ ), suggesting that framing does not impact the perceived trustworthiness of the certification or efficacy of consumers to make change.

## 5. Discussion

Across three studies, we examine information-seeking and ignorance in a realistic setting in which participants choose products that involve tradeoffs between multiple attributes, including actual Organic and Fairtrade certifications. The inclusion of multiple attributes reduced the obviousness of direct tradeoffs, providing “cover” to ignore ethical information and reducing demand effects to focus solely on ethical



**Fig. 5.** Smoothed raw data of the proportion of certified choices A., Study 1 and B., Study 2, depending on the price premium. The colors and line pattern indicate open information and hidden information split into fully revealed, partially revealed and partially ignored, fully ignored. The shaded bands represent 95% confidence intervals.



**Fig. 6.** Average ratings of A. health, quality, guilt over not buying, and moral obligation to buy certified items in both Studies 1 and 2. B. Study 2 importance ratings of each attribute for different frames. Error bars represent 95% confidence intervals.

attributes. Further, information was hidden using MouseLabWEB which allowed participants free and easy access to information by hovering their mouse, making the choice of whether to reveal less explicit and the physical cost to reveal constant across attributes, while also enabling more precise measures of attention. In this setting, we find that hidden information leads to a reduction in the use of certified information, but the effects are relatively small and which certification is statistically significantly impacted differs between studies.

In Study 1, there is a greater reduction in the use of Fairtrade certifications whereas in Studies 2 and 3 there is a greater reduction in using

Organic certifications under hidden information. These differences may be due to differences in samples or incentives, with students making incentivized choices in Study 1 compared to hypothetical choices of representative U.S. samples in Studies 2 and 3. Further, in Study 2, we emphasized the health impacts of Organic more explicitly which could align with survey studies that find health information is avoided more than consumer information (Reisch et al., 2021). In addition, Study 1 was conducted in a laboratory setting with an experimenter present, which may have induced different socially-oriented behavior than on-line participants in their own settings, as in Studies 2 and 3. Further

research across samples, incentives, and frames can help pinpoint the reason for these mixed findings. Despite differences in approach and significance, the magnitude of reduction in use of Organic certifications is similar across all studies, and our attention process data suggests that people engage in a similar process across studies with price information the most used and least ignored, even in hypothetical choices. Taken together, these findings suggest that hidden information may lead to a reduction in certified choices, but the effect is quite small and depends to some extent on the sample and context. Thus, our data suggest that willful ignorance does not play a major role in depressing ethical consumer choices.

### 5.1. Affective framing

In commercial contexts, ethical information is predominantly framed positively, although research suggests that negative framing could be more impactful but could also trigger avoidance. In Study 2, we explore the impact of affective framing on the use of certified information to better understand the mechanisms of information-seeking and ignorance. Negative framing leads to the highest weight on certifications, followed by positive framing, and finally neutral framing, regardless of open or hidden information. This is further supported by our attention measures showing that negative framing leads to more, not less, certification-seeking and both frames reduce ignorance compared to neutral framing. There are several potential reasons we did not find a backfire effect of negative framing under hidden information. First, both frames induced higher importance ratings relative to neutral framing, and negative frames induced the highest importance ratings. The increased importance of affective frames relative to neutral may be due in part to frame reminders during choice that briefly restated the impacts of certifications, increasing the salience of impact information in addition to the affective impact of positive and negative frames. Importance may increase curiosity or instrumental motives such that participants are more curious about whether options are certified or find it more relevant and important in their choice, which may outweigh the negative affect associated with the certifications. This aligns with moral ignorance studies finding less ignorance for environmental causes in more abstract economic games (Lind et al., 2019; Momsen and Ohndorf, 2020).

Second, participants were provided with an immediate, concrete solution to the negative emotion because they could choose a (potentially more expensive) certified option. This sense of efficacy to solve issues is a factor known to play a role in action in health and sustainability domains (Tannenbaum et al., 2015; White et al., 2019). Finally, another factor that may account for the strength of negative relative to positive framing is that the frames may not be perfectly equivalent in strength since they are not about numerical quantities. Negative framing has a greater impact even for quantifiable frames such as financial gains vs. losses or lives saved vs. deaths prevented, but qualitative frames may introduce additional differences that enhance this asymmetry between frames (Kahneman and Tversky, 1979; Metzger and Günther, 2019). For example, framing Fairtrade positively to “Improve worker protections” may differ in strength from the negative “Don’t risk worker exploitation,” leading to different inferences about the non-certified options. Positive framing could imply more neutral non-certified labor practices than the exploitative practices implied by negative framing, increasing the perceived stakes and impact. Therefore, the impact of frames may be attributed both to framing communication and also to differing inferences about the baseline comparison.

### 5.2. Role of attention

Across all studies, our fine-grained measures of attention allow us to show that attention moderates the use of certification information in terms of extent of information gathered (dwell time, number of reveals), and binary information-seeking versus ignorance. This fits with findings

in the attention literature that ethical motivations relate to use of labels and that the design of labels matters. Larger and more salient labels that grab attention have more impact whereas those that require additional physical or temporal costs like scanning QR codes or clicking links are less impactful (Gaudeul and Kawczyk, 2023; Grossman, 2014; Orquin et al., 2020; Peschel et al., 2019; Van Loo et al., 2015).

### 5.3. Practical implications and relation to existing labels

In terms of practical implications, our findings suggest that negatively framed labels are most effective in increasing ethical consumption, but the exact implementation may vary depending on the type of label. There are two types of negative labels typically discussed in the literature, warning labels on products containing negative attributes and negatively framed certifications on products highlighting the absence of harm. An example of the first type of negative labeling is seen in the health domain in warning labels on unhealthy foods first introduced in Chile. Warning labels have led to a reduction in choosing labeled foods and a price increase that further cements the switch away from the most unhealthy foods (Ares et al., 2023; Pachali et al., 2023). Such negative warning labels are rare in ethical products, as most ethical certifications indicate the presence of positive ethical attributes. Negatively framed ethical certifications focus on the absence or reduction of harm (e.g., cruelty-free or CO<sub>2</sub> reduction), implicitly casting doubt on the practices of non-certified competitors. Indeed, some negatively framed certifications developed out of public controversy over a problematic practice (e.g., dolphin-free tuna, slave-free chocolate) (Teisl et al., 2002). Negative framing can also be applied to comprehensive ratings or traffic-light labels (e.g., animal welfare or CO<sub>2</sub> footprint) that rate all products in a category. Indeed, one study found that negatively framed (“environmentally damaging”) ratings led to more eco-friendly choices than positively framed (“environmentally friendly”) ratings (Gorissen et al., 2024). Despite the promise of negative labeling, there is little evidence on how such labels impact consumer choices outside of the lab. Further complicating matters is that in real-world settings, positively and negatively-framed certifications may focus on different attributes (e.g., Fairtrade includes premiums to support community investment whereas slave-free focuses on aid for those affected by child slavery), making their impacts difficult to directly compare. Moreover, it may be hard to phrase benefits equally strongly as harms, so the limits of what can be conveyed in each framing may be different and imply different baselines for non-certified options. Aside from framing, we also find that price is the attribute that received the most attention and weight in choice. Therefore, policies that act on price such as taxation or subsidies are likely most effective, but in the absence of political support or will to enact such policies, negative labeling and increasing labels’ visual prominence may promote more ethical considerations in choice.

### 5.4. Limitations and future research

There are a few limitations of our design that impact interpretation of the results. One limitation of our setting is that by defining the certifications in the instructions, we may prime participants to think about the ethical impacts of their choices, making certifications more salient than in typical consumer settings. We define all attributes to avoid highlighting ethical impacts exclusively, but if ethical attributes are more rarely considered, this still may have an impact. This is important because previous research shows that people may use sustainability and other attributes more if they directly seek it out rather than coming across it (Gaudeul and Kawczyk, 2023; O’Rourke and Ringer, 2016). Therefore, failing to think about ethical impacts in shopping settings may undermine labels’ impacts, especially when habits and brand information take precedence and there is an absence of social norms to seek such information (Song et al., 2019).

Another design feature that may impact our findings is the within-subjects design in which open and hidden contexts are randomized

across trials. While this may be closer to real-world decisions in which consumers are sometimes exposed to certifications and other times must seek them, it also creates a more stringent test of ignorance. Because participants were exposed to certification information on open trials regardless of their preference, they may have become habituated to the information over time or found it hard to switch strategies between trials, reducing its threat or giving less motivation to ignore it as they knew they could encounter it in a subsequent trial. We also only look at binary choices between two options, rather than collecting measures of intensity of preference such as WTP or confidence. Such measures might allow a more precise determination of the circumstances under which participants are most likely to seek or ignore ethical information.

Finally, there are many additional factors that may undermine ethical consumption in real-world settings that should be explored in future research. One consideration is that the meaning of non-certified options must be inferred for binary certifications. Because such inferences may be effortful, a failure to make such inferences could also be another form of willful ignorance. In our study, we made this inference explicit for non-certified options to ensure that participants were always exposed to the frame when revealing certification information. Therefore, our study may show larger framing effects than typical binary labels, and this could amplify the effectiveness of negative frames if the inferences for negative framing are stronger. Instead, our design may more closely reflect rating or traffic light labels that assign ratings to all products within a category, making comparisons explicit. Another factor is that consumers may learn to ignore information after exposure to it rather than strategically in advance. Indeed, we observe a decrease in information-seeking and an increase in ignorance over time (Supplementary Fig. 4), although ignorance remains below 20% for all attributes. To further explore the impact of early exposure and temporal patterns in the use of ethical information, we conducted two additional analyses. First, participants' first five trials were fixed as open or hidden, which allows us to examine the impact of this early exposure on subsequent information use. We find no significant differences in certification use for early exposure to open versus hidden information. However, when we include this indicator, we observe significant reductions in the use of Fairtrade and Organic certifications in hidden trials across both studies for participants with early exposure to open information (Supplementary Table 14). This pattern hints at the possibility that early exposure to open information may enhance willful ignorance, but the lack of significant differences between the early exposure groups makes this finding inconclusive and warrants further exploration. Second, regressions that examine shifts in the weight placed on certifications over time find a reduction in the use of Fairtrade certifications during hidden trials in Study 2, but this reduction did not occur in Study 1 or for Organic certifications (Supplementary Table 15). Together, these analyses offer suggestive evidence that participants may learn to ignore inconvenient or unpleasant information over time, but this should be explored in future studies with more power to detect order effects. Other potential factors include financial barriers, a lack of trust in certifications with the prevalence of "greenwashing," and justifying unethical behavior in market settings (White et al., 2019; Ziegler et al., 2024).

### 5.5. Conclusion

We study information-seeking and avoidance in a more realistic consumer setting with many attributes and easy access to ethical certifications. In this context, we find a discernible but relatively small reduction in the use of certification information when it is hidden. The type of certification information that is avoided varies across studies, suggesting that while willful ignorance may play a small role, it is likely not the primary mechanism of intention-behavior gaps.

Further, we test theories of affective information avoidance by

framing certification information either positively or negatively, finding that negative framing increases certification use in choice regardless of whether information is open or hidden and even increases certification-seeking under hidden information. This finding confirms that negative framing does not backfire, so affective ignorance motives may be overridden by the higher importance and potentially instrumental motives attributed to the certification. Further, the ability to choose certified options may reduce avoidance because the issue is straightforward to solve. Finally, bridging work on ethical ignorance with the consumer attention literature on attracting attention to labels in choice, we show that variation in attention, both in what is revealed and also in the extent to which attributes are attended, moderates the use of attributes in choice. By integrating research on ethical ignorance and framing with consumer attention literature, we underscore the moderating role of attention in shaping attribute utilization in choice, thus contributing to a comprehensive understanding of consumer decision-making processes in ethical choices.

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### CRediT authorship contribution statement

**Dianna R. Amasino:** Writing – original draft, Visualization, Software, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Suzanne Oosterwijk:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization. **Nicolette J. Sullivan:** Writing – review & editing, Methodology, Conceptualization. **Joël van der Weele:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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### Appendix A. Supplementary data

Supplementary material for this article can be found online at <https://doi.org/10.1016/j.ecolecon.2024.108467>.

### Data availability

All data and code to reproduce the analysis are available on the Open Science Framework (OSF) platform: <https://osf.io/ha86g/>.

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