Does Eco-Labelling on Meal Options Prompt Consumers to Make More Sustainable Choices?

Scott Piggott/University of Bristol

A Feasibility and Pilot Study in University of Bristol Cafés

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Background

Livestock production contributes an estimated 15% of human-induced global greenhouse gas emissions (1), contributing to global warming, degraded ecosystems, biodiversity and water resources (2,3).

As the human global population increases, current agricultural practices will continue to contribute to global warming, leading to severe and irreversible consequences, such as loss of species, lack of food, and poverty (4).


AI generated

Plant-based diets can have a positive impact in mitigating serious climate degradation (5,6,7). These findings have been reflected by the United Nations (8), the Eat-Lancet report (9) and the UK's Committee on Climate Change (10).

There is a lack of detailed understanding among the public of the environmental impact of food, particularly regarding the association between meat and dairy consumption and climate change (11).

Evidence suggests that those with a good understanding of food's environmental impact are more likely to choose food products with a low environmental footprint (12).

One way to promote a sustainable diet is to label food with information about sustainability (eco-labelling), for example by providing details of water and land usage, as well as greenhouse gas emissions.

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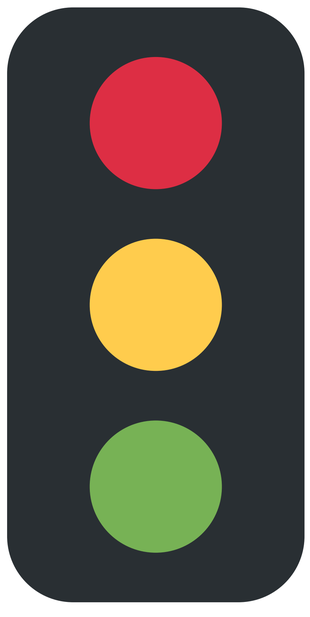
So far, studies have yielded mixed results; while some studies suggest eco-labelling has little influence on consumers' food choices (13,14,15,16,17), others have found that eco-labels increase sustainable food consumption (18,19).

Labels such as the "Traffic Light Index", which provides information on the products' environmental footprint in the form of a traffic light with green (sustainable), yellow (moderate impact), and red (unsustainable) indicators, has been shown to be viable, effective and easy to understand by consumers (20). Our recent online study demonstrated that traffic light labelling was effective at promoting more sustainable food choices (21).



Here, we conducted a feasibility study examining the implementation of traffic light eco-labels in a real-world setting. This will inform larger studies in the future.

Study Design

Four University of Bristol cafés participated in this feasibility study. Each completed a one-week control period (business as usual), followed by a one-week intervention period where we placed traffic light eco-labels on all pre-packaged lunch items.

Objectives

1. Assess the feasibility of adding eco-labels to food products to inform a larger trial.
2. Assess the acceptability to consumers and café staff of adding eco-labels to food products.
3. Assess the acceptability to consumers of the newly designed eco-label.

Materials

Eco-labels

- Eco-labels had three subcategories (water usage, biodiversity loss, greenhouse gas emissions), each rated as either low (green), medium (amber) or high (red) environmental impact.
- Each label was also given an overall rating of low, medium or high environmental impact based on these subcategories.

Poster

One A4 and one A5 poster was displayed in each café. These were placed by the pre-packaged lunch item display and the checkout point respectively. The purpose of these posters was to make consumers aware of the study, and direct them to the survey via a QR code.

Measures

Informal discussions with the catering / café staff and research assistants

Assessed the feasibility of adding eco-labelling and running the study and staff acceptability.

Online survey of café patrons

Assessed how acceptable café patrons fround the eco-labels.

Demographic data for patrons (age, gender and dietary behaviour) was collected.

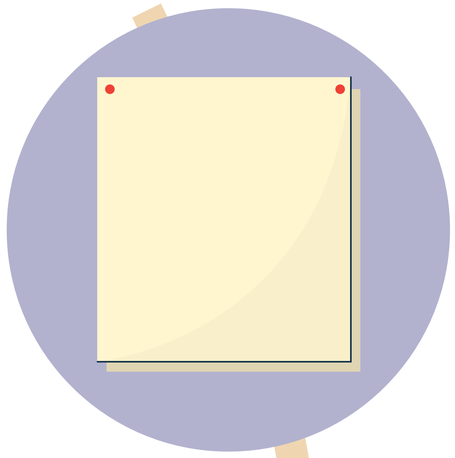
Sales data

Till data was used to record the number of low, medium, and high environmental impact lunches sold across control and intervention periods.

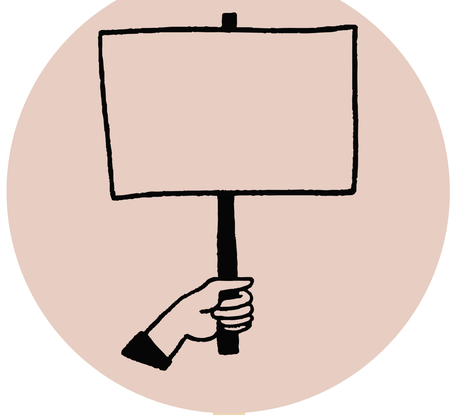
Procedure

All cafés performed a one-week control period (business as usual), followed by a one-week intervention period (eco-labels present).

Every morning during the intervention period, eco-labels were attached to pre-packaged lunch items, including sandwiches, wraps, rolls, paninis and toasties. Cafés ordered more items than usual during the study to avoid participants basing their choice soley on what was left.

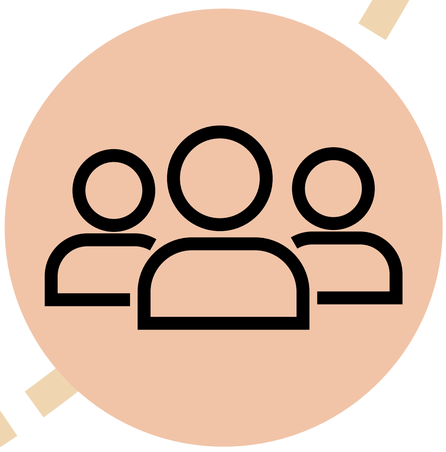


Posters were placed in cafés which pointed customers to a survey QR code (these were not present during control weeks.)



A researcher promoted the study every lunch time to encourage customers to complete the survey.

Customers completed the online survey which asked them about their opinions on the eco-labels, and if the labels influenced their choice of lunch item.



Café staff were asked about their experience during the study to assess feasibility and acceptibility.

Results

Sales Data

Four University of Bristol cafés took part in the study and sales data were collected for a control and intervention week for all cafés.

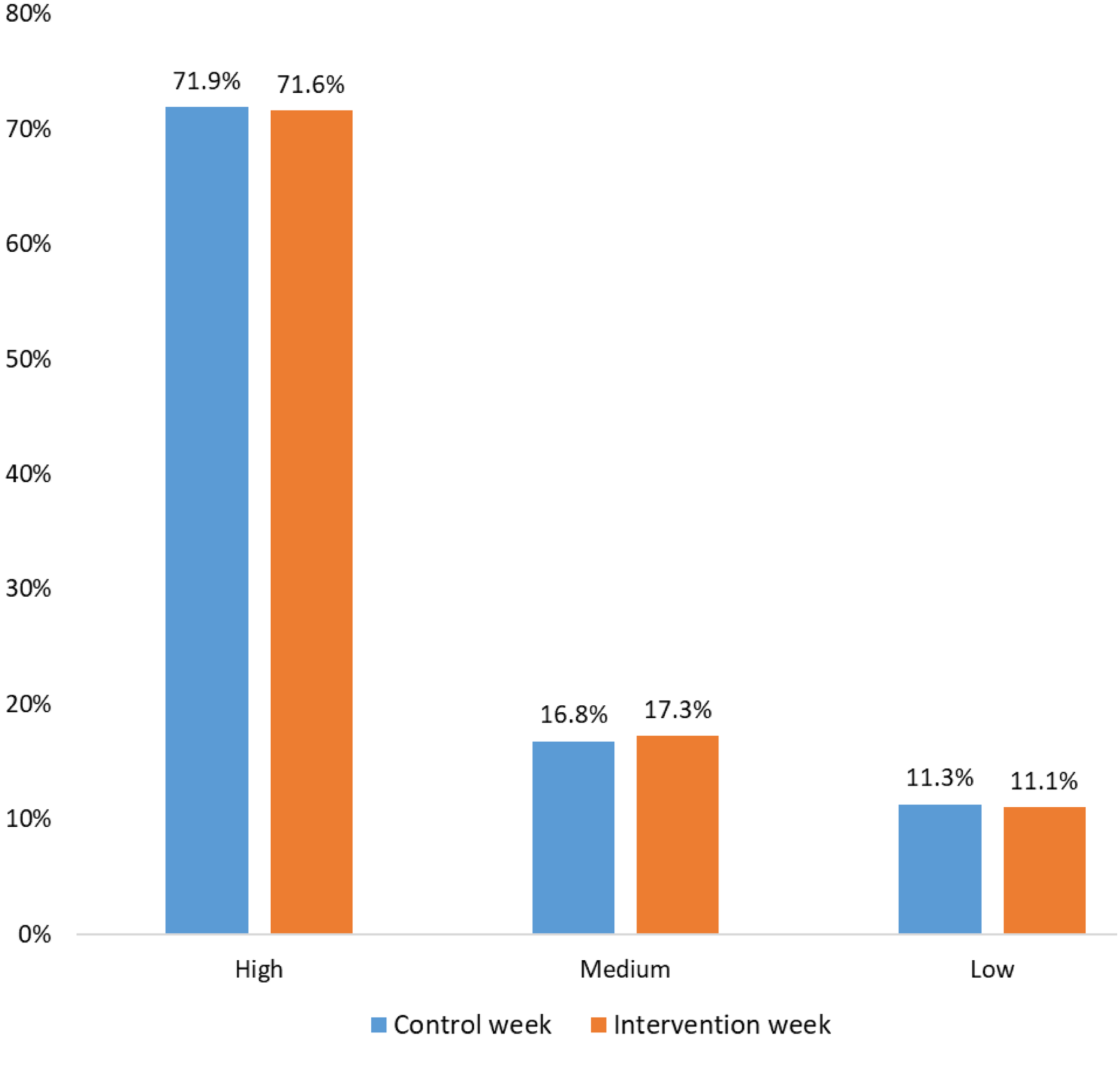
There were more products sold with higher environmental impact than lower during both the control and intervention weeks. In the control week, the mean amount of high impact products sold for one week in one café was 205, medium impact products was 48, and low impact products was 32. Similarly, in the intervention week, the mean amount of high impact products was 205, medium impact products was 49, and low impact products was 32. Future trials should consider basing their intervention in cafés with an even distribution to ensure that sustainable choices are as accessible and varied for consumers as high impact products are.

Efficacy of Eco-Labels

There was no meaningful difference in sales of low, medium or high environmental impact food products between control and intervention weeks. This was assessed by combining the sales data from these cafés and observing the mean differences between the control week and the intervention week for all three label types, displayed in the table below.

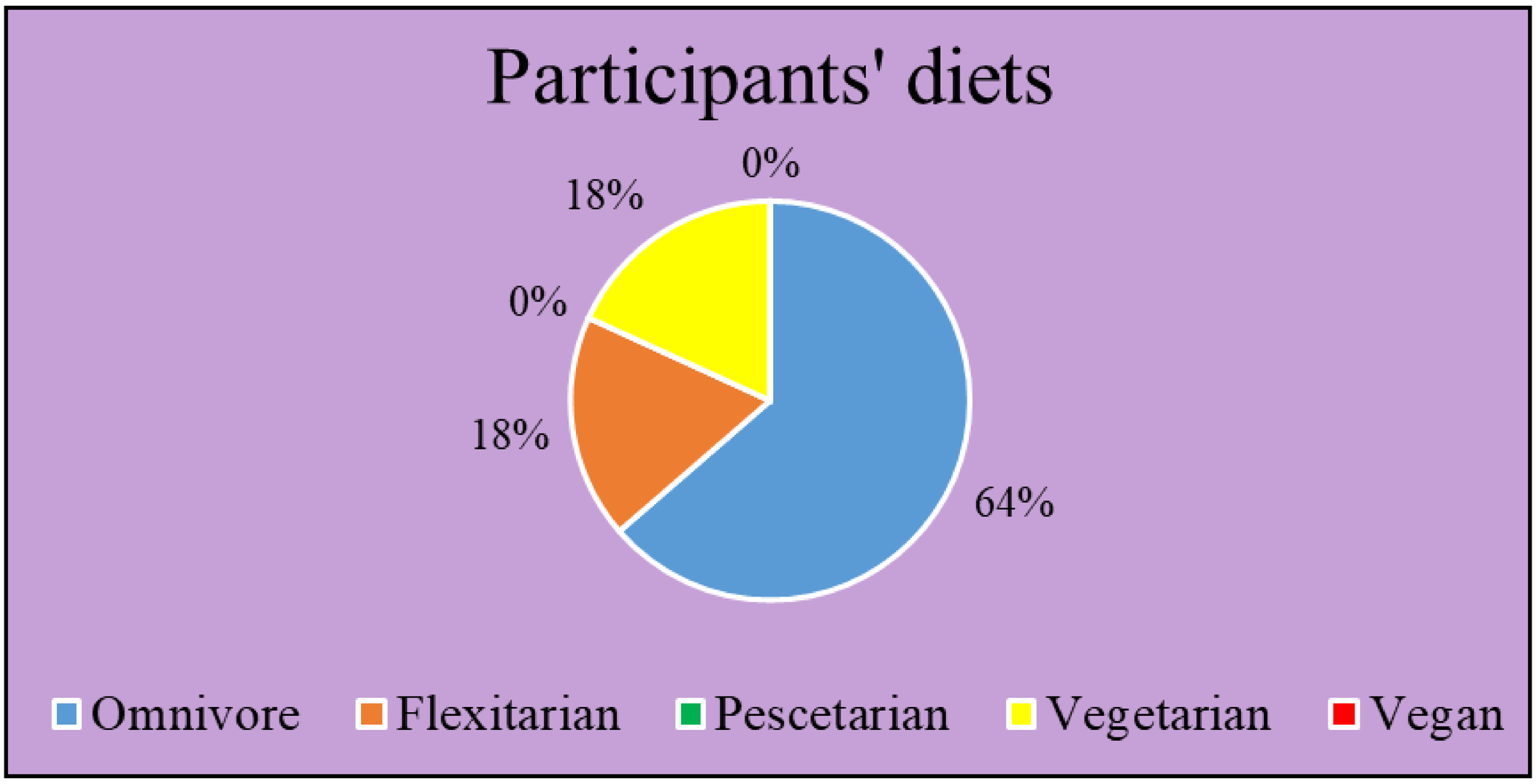
	Number of products sold		Mean difference
Overall environmental impact of pre-packaged lunch items	Control period	Intervention period	
High	818	820	*M* = -0.50, *SD* = 0.35
Medium	191	198	*M* = -1.75, *SD* = 1.24
Low	129	127	*M* = 0.50, *SD* = 0.35

The bar chart below displays the percentages of each label type sold in the control week and the intervention week.



Online Survey of Café Patrons

There were 11 café customers (participants) who completed the survey, with a mean age of 35. 55% were female and the majority were omnivores.



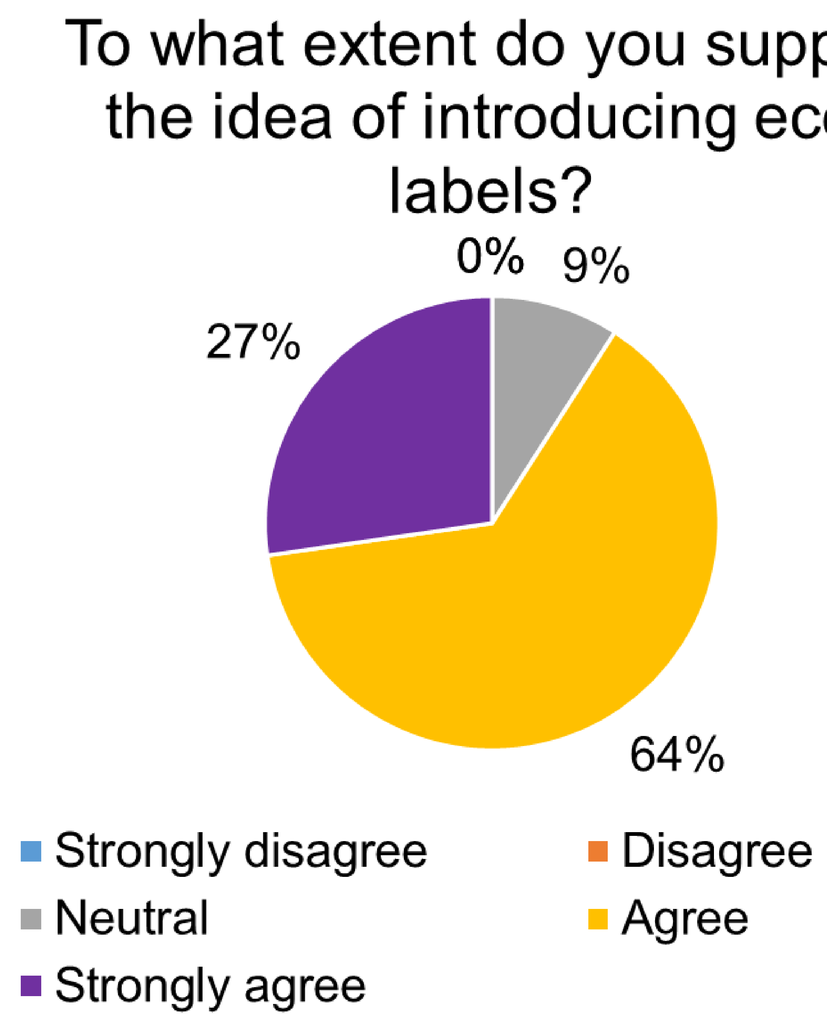
Efficacy of Eco-Labels

- 55% of participants said the eco-labels affected their food choice:
  - The eco-labels made it easier to make a ‘green’ choice, and increased awareness of environmental impacts.
  - However some participants still chose a high impact product for convenience, time-efficiency, and preference.
- 45% of participants said the eco-labels did not impact their food choice. This was due to many factors including;
  - Limited selection of food items on offer;
  - Personal preference;
  - Price of food item;
  - Not reading the label properly until after purchase.

Acceptability to consumers

Adding eco-labels to food products

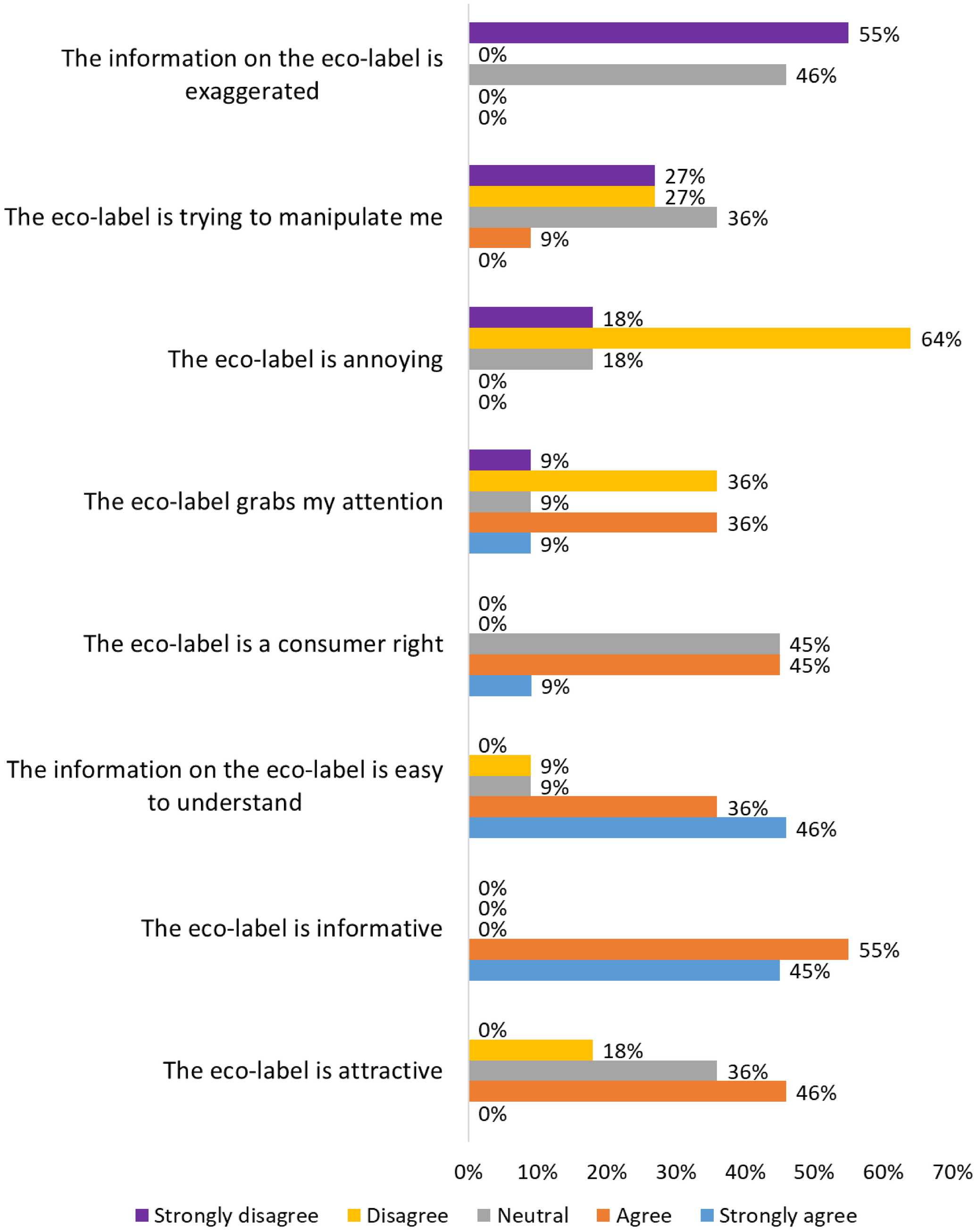
- Most participants supported the idea of introducing eco-labels on food products
- The labels were perceived as important for spreading awareness and increasing knowledge, allowing consumers to make informed choices.



  - Other participants believed that the labels push responsibility onto the consumer, rather than the supplier or the cafés who choose to use that supplier (and who prioritise selling high impact products).

The newly designed eco-label

- No participants thought the labels were exaggerated or annoying, but 9% felt they were trying to manipulate them.
- All participants believed that the label was informative although less than half thought the label was attractive and there were mixed opinions on whether the eco-labels grabbed attention.
- Most participants thought that the label was easy to understand and over half agreed that the information on the eco-label is a consumer right.


The information on the eco-label is exaggerated
55%
0%
46%
0%
0%
The eco-label is trying to manipulate me
27%
27%
36%
9%
0%
The eco-label is annoying
18%
64%
18%
0%
0%
The eco-label grabs my attention
9%
36%
9%
36%
9%
0%
0%
The eco-label is a consumer right
45%
45%
9%
The information on the eco-label is easy to understand
0%
9%
9%
36%
46%
The eco-label is informative
0%
0%
0%
55%
45%
0%
The eco-label is attractive
18%
36%
46%
0%
0%
10%
20%
30%
40%
50%
60%
70%
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

Informal discussions with staff and researchers

Implementation

There were several issues with the implementation of the intervention. These are separated into general issues (which would likely affect future studies of this kind) and specific issues (which should only affect this study).

General implementation issues:

- Cafés were asked not to display lunch items before they had been labelled. Occassionally, café staff displayed unlabelled items, which may have confounded the sales data.
- The process of adding labels to food items was time consuming.
- Labelling food items was subject to human error.

Specific implementation issues:

- Some food items were not assigned a label prior to the study, and so the ratings were estimated. This may have caused innaccuracies in the information on these products.
- One café's refrigerator broke shortly before the intervention period, and was replaced by a smaller one, meaning this café was unable to display all food items at one time.

Acceptability to café staff

One staff member from each café was spoken to following the study.

Adding the eco-labels to foods

- As researchers came in early to label food items, before the cafés opened, the addition of eco-labels was integrated into university cafés without causing disruption or affecting profits
- However, as café staff were not able to display food items until they were labelled by a researcher, some staff said that sometimes the study caused a very minor delay in the morning.

Communication to customers

- The study wasn’t always best communicated to consumers by café staff both during busy periods when staff were rushed, and during quiet periods when there were few consumers to promote it to.

Opinions on the eco-labels

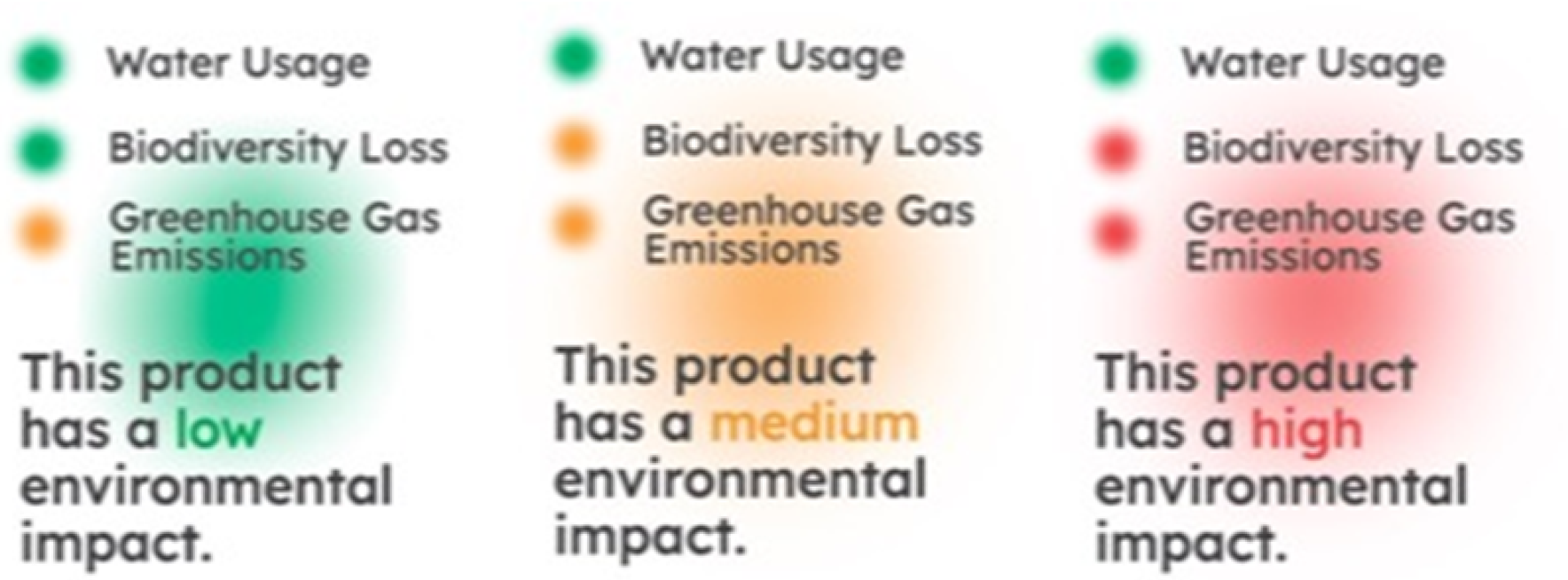
- Most café staff did not think that eco-labels could encourage customers to purchase more sustainable options as most people look for what they want to eat, or cheap options.
- Another café staff member said that eco-labels were seen as very informative, particularly for café staff, but they were not seen to be of any interest to students.
- One staff member believed that eco-labels effectively promote more sustainable options, and subsequently have a positive impact.

Practicality

There were significantly more products with higher environmental impact than lower, which meant that many patrons did not have an opportunity to buy low impact foods.

A major challenge was recruiting participants to complete the survey, many of whom were not aware the study was running or that we were collecting data. This may have been for a number of reasons:

- The labels were very detailed. A simpler design would make it easier and faster for consumers to recognise the products' environmental impact. A larger trial should consider removing the sub-categories to avoid overwhelming consumers with information that is likely to be ignored in a busy café setting.
- Despite their colourful design, the posters were not very visible in the busy café environment.
- The incentive for survey completion was only 50p. Future trials should consider increasing the value of this monetary incentive
- Food items which were heated up were removed from their original packaging, so customers purchasing these items did not see the eco-labels.



Take Home Messages

As a feasibility study, this study is not able to make any conclusions about whether the eco-labels influenced behaviour.

However, data from the survey suggests the eco-labels were generally positively received by customers, with most participants agreeing that eco-labels should be added to food products.

The vast majority of food products on sale and purchased were classified as having a high environmental impact. While eco-labels may be one method of promoting more sustainable diets, other interventions should be considered, including institutional policies such as making high environmental impact products much less available.

Acknowledgements

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