EXPLORING THE PROBLEMS AND SOLUTIONS OF ATTITUDE-BEHAVIOUR GAP IN SUSTAINABLE CONSUMPTION

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Abstract

Sustainable consumption refers to the judicious use of materials, products, energy, and immaterial services that minimise negative impacts on our environment. The Value-Belief-Norm (VBN) theory explains the influence of human values on behaviour in environmental issues. Nudges have been known to encourage people to make certain decisions without using coercion. This paper attempts to find out if behavioural interventions help increase pro-environmental choices in a sample with similar values, beliefs, and attitudes towards environmentalism. Moreover, we aimed to see to what extent attitudes fail to be reflected in consumer behaviour. Primary data was collected from the urban and educated population in the Delhi-NCR region in India and Kathmandu in Nepal. The survey was divided into two parts: a market simulation for observing consumer behaviour and a questionnaire to assess participants' attitudes towards environmental issues and sustainable consumption. The sample was divided into one treatment and one control group, wherein the former was exposed to behavioural interventions in the market simulation. The study concludes with 95% confidence that the tested interventions have encouraged participants in the treatment group to choose more sustainable products than members of the control group. Based on these observations, this paper also suggests behavioural policies that can be implemented to reduce the attitude-behaviour gap in the context of sustainable consumption, thus contributing to helping India achieve its sustainability goals.

JEL Classification: D120, D910, Q580
Keywords: sustainable consumption, values belief norm theory, behavioural interventions, market simulation, environmental impact

1. INTRODUCTION

Every purchase of a product or service has an environmental impact and implications. Sustainable consumption is the practice that minimises negative impacts on the environment, ensuring that the present generation's consumption does not compromise the future generation's opportunity to consume. Each purchase contributes to a more or less sustainable pattern of consumption. While considering what to purchase, individuals engage in a complex process of decision-making that can be motivated and demotivated by multiple factors.

A significant body of knowledge has identified motivators for consumption, especially those of a sustainable nature. The Theory of Planned Behaviour (TPB), Norm-Activation Theory (NAT), and VBN (Value- Belief-Norm) are the main theories applied in research on environmental behaviour. First established by Stern et al., the VBN framework presents the influence of human values on behaviour in issues related to the environment. Stern (2008, p. 366) stated that behaviour is triggered "when an individual comes to believe that a personal value is threatened and that he or she can relieve that threat by appropriate action".

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Many studies have empirically validated the variables of the VBN framework. Researchers have used the framework to predict pro-environmental behaviours, but only a few have suggested that social norms, which oblige people to act in a certain way, contribute minimally to affecting such behaviours. In the Indian context, however, Kala & Sharma (2010) have found that social and cultural norms are highly influential in having a pro-environmental attitude. This paper attempts to find out if behavioural interventions help increase pro-environmental choices in a sample with similar values, beliefs, and attitudes towards environmentalism. These behavioural interventions include positive positioning of products, labelling, the bandwagon effect, and information provision. Moreover, we aimed to see to what extent attitudes fail to be reflected in consumer behaviour while also accounting for social norms as an extension of the VBN framework. The rest of the paper is structured in the following manner: Section 2 provides an overview of the existing literature on sustainable consumption and behavioural interventions. Section 3 entails the research methodology, segueing into the details of the study population, study 5 materials, and analysis procedures. Section 4 includes a detailed discussion of the results and observations, and lastly, Section 5 concludes the study. The references for this paper, followed by the Appendix section, can be found at the end.

2. LITERATURE REVIEW

2.1 VALUE BELIEF NORM FRAMEWORK

In India, Francis and Sarangi (2022) used the Value Belief Norm framework, showing that awareness of current environmental problems is positively correlated with higher literacy rates. Surprisingly, millennials from big cities were found to be less engaged in sustainable consumption and have a lower willingness to sacrifice than millennials from smaller cities. Wang et al. (2021) illustrate in their study that individuals do not necessarily decide to consume sustainably based on their attitudes. Several other factors also influence sustainable consumption intentions, like high prices, the inaccessibility of products, inexperience with green consumption, and a lack of trust in the products' quality.

Significant work has been done with the utilisation of a choice-based approach to environmental behaviour. Rokka and Uusitalo (2008) use the framework and conclude that price, packaging feasibility, and brand were important product attributes in the consumer's choice in the mentioned order. Antonetti and Maklan (2014) aimed to study whether pride and guilt can influence the choices consumers make while purchasing sustainable products and went on to explain why this may or may not be the case. The study found that feelings of guilt and pride, activated by a single consumption episode, can regulate sustainable consumption by affecting consumers' general perceptions of effectiveness. After experiencing guilt or pride, consumers see themselves as the cause of relevant sustainability outcomes. Grebitus et al. (2020) conclude that environmental concerns did not play a huge role in consumers' decision-making; instead, cost and convenience did. Introducing a nudge, i.e., giving pro-environmental decision guidance, to make environmentally friendly choices did modestly improve consumers' choices.

2.2 NUDGES

Nudges and other behavioural interventions have been implemented in many studies to encourage environmentally friendly consumption behaviour. Vigours (2018) introduced four types of nudges: self-nudges, choice architecture, social norms, and pre-commitments. While 6 nudges can support consumers in making decisions that align with their intentions, they can also be used to manipulate them. Bolos et al. (2019) use the Lancaster Utility Model, Nudging Interventions, and goal-based theory. Their study points out that cognitive and behavioural nudges have to be implemented in food waste reduction campaigns to encourage consumers to choose food with cosmetic imperfections and avoid food waste. Berger, M., et al. (2020) observed which digital nudges are effective in online food shopping contexts regarding the promotion of ecologically sustainable food choices. Their findings show that solely emphasising sustainable product options based on a topic unrelated to sustainability had adverse effects on shopping behaviour. Theotokis and Manganari (2014) studied the effect of changing the default options available to individuals through the model of choice architecture.

The study showed that the opt-out default policy is more effective than the opt-in policy because it increases anticipated guilt. This effect was observed to be stronger for consumers who are less conscious of the environment. The study also showed that a forced-choice policy is more effective than an opt-in policy but not significantly more effective than an opt-out policy.People might be motivated to act responsibly, but there may be barriers to doing so for many reasons. Choi and Ng (2011) conducted a study to find out the micro-purchase decision process of consumer technology products for green consumers. "Green consumers" in their interviews expressed that the major barriers to buying green products were a lack of information about the green products and a lack of time to put in the effort to find the information.

3. RESEARCH METHODOLOGY

3.1 PARTICIPANTS

A combination of snowball and convenience sampling methods was used to obtain a sample population willing to participate in this research. The sample was randomly split into control and treatment groups with the help of the statistical tool STATA. Participants had registered themselves via a Google form soliciting their participation. The form informed them about the purpose of the research, collected demographic and contact details, and assured confidentiality of their personal information. The study population included educated people from the Delhi NCR region in India and Kathmandu in Nepal, with education levels of high school or higher. A total 7 of 122 individuals registered voluntarily to participate in the research survey. 61 participants filled out the control group questionnaire, and 61 participants filled out the treatment group questionnaire. 96% of the sample belonged to a young age group of 18 to 30 years old and were non-working students.

3.2 RESEARCH INSTRUMENT

To observe consumer behaviour, part one of the survey questionnaires began with a simulation market of four products: toothbrushes, t-shirts, oatmeal biscuits, and stationery pouches. The products displayed were made as standard as possible to minimise the effect of tastes and preferences on purchase decisions. Further, real prices and details of the products were provided in the simulation to replicate their real purchasing decisions as closely as possible. Both the treatment and control groups participated in the simulation, but the former was also exposed to four behavioural interventions, one in each product market. These interventions included positive positioning of the sustainable product(s), product labelling, i.e., labels displaying the environmental impact of products, the bandwagon effect or herd mentality, and information provision. Participants were asked to decide which of the displayed products they would purchase given their actual income.

Part two of the survey questionnaire employed the VBN model, which predicts pro-environmental behaviour. A five-point Likert-type scale was used to account for the importance of each value and the respondent's agreement with the beliefs and norms. Each item was assigned a value from 1 to 5, which corresponds to the five levels of agreement, ranging from "strongly Disagree" to "Strongly Agree", and from "Not Important" to "Very Important". This segment of the questionnaire was the same for both the treatment and control groups.

3.3 ANALYSIS

The responses of the participants on the Likert scale were recoded into numeric form using MS Excel. In the market simulation section, a sustainable purchase was denoted by 1, and a non- sustainable purchase was denoted by 0. Thus, one participant could get a maximum score of 4 by 8 purchasing one sustainable product in each product category. In the values, beliefs, and norms sections, the scales from "Strongly Disagree" to "Strongly Agree" and "Not Important" to "Very Important" were recoded as numbers from 1 to 5. All statements were positively framed. Hence, a larger number on this scale indicated a more environmentally conscious attitude. The total number of sustainable purchases made was calculated for each participant and expressed as a percentage of the maximum number of sustainable purchases possible. Similarly, the scores in the values, beliefs, and norms sections were totalled and expressed as a percentage of the maximum total score possible.

This was done for both the treatment group and the control group. We used the Student's t-test to check if the mean values of the score of sustainable purchases in the treatment and control groups were significantly different from each other in Stata.

4. RESULTS AND DISCUSSION

4.1 FINDINGS

Table 1, Table 2, and Figure 1 summarise the results of the survey that required participants to make product purchase choices and rank their values, beliefs, and norms given certain statements pertaining to sustainable consumption and environmental issues. The purchases made by the participants are indicative of their behaviour. Table 1 shows the scores for the treatment group, the one that received nudges, and Table 2 shows the scores for the control group, the one that did not receive nudges. The Google Form survey is available in the Appendix. As shown in the table, 38.93% of the purchases were sustainable products in the treatment group, whereas only 28.28% of the purchases were sustainable products in the control group.

We observe that both groups score similarly in the values, beliefs, and norms section of the survey. A Student's t-test for two samples was run on STATA to check if the mean value of the sustainable purchases score was significantly different for the treatment and control groups. We found that the averages are different at the level of significance of 5%. We conclude with 95% confidence that our interventions have encouraged participants in the treatment group to choose more sustainable products than members of the control group. The maximum score of 100% in the second section, i.e., the VBN questionnaire, suggests the maximum pro-sustainable consumption attitude that can be exhibited by a participant. The treatment and control groups have scored very similarly, 80.16% and 81.16%, respectively, in the attitude section, which is the summation of scores of values, beliefs, and norms. Since the framework is also used to predict pro-environmental behaviour, the scores indicated that participants in both groups are quite strongly and almost equally likely to exhibit sustainable consumption behaviour. When compared with their actual purchases, the attitude-behaviour gaps become apparent.

Table 1: *Treatment group scores in sustainable consumption, value, belief, norm and total attitude.*

Scores	Sustainable Purchases	Value Score	Belief Score	Norm Score	Total Attitude Score (VBN)
Actual Score	95	2046	1289	1799	5134
Maximum Score	244	2440	1525	2440	6405
Percentage (Actual out of maximum)	**38.93%**	83.85%	84.52%	73.73%	**80.16%**

Source: Authors' calculation

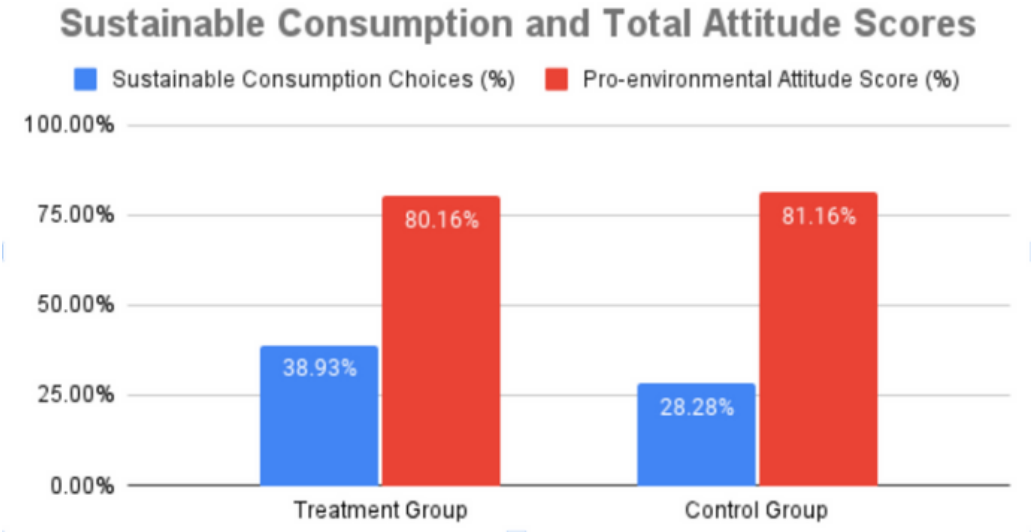
Table 2: *Unemployment Rate (in percentage)*

Scores	Sustainable Purchases	Value Score	Belief Score	Norm Score	Total Attitude Score (VBN)
Actual Score	69	2065	1317	1816	5198
Maximum Score	244	2440	1525	2440	6405
Percentage(Actual out of maximum)	**28.28%**	84.63%	86.36%	74.43%	**81.16%**

Source: Authors' calculation

Based on the results shown in Figure 1, it appears that the sample was homogeneous in terms of pro-environmentalist attitudes since the two groups scored differently in purchasing sustainable products but similarly in the values, beliefs, and norms sections. The differences in purchase patterns could be largely explained by the behavioural interventions implemented in the treatment group. The attitude-behaviour gap, as measured by the difference between the Total Attitude Score and the percentage of sustainable purchases, is observed to be about 41.23% in the treatment group, whereas the gap is 52.88% in the control group. Figure 2 shows the gap between the two groups' behaviours in purchasing sustainable products. The blue bars represent the percentage of sustainable purchases made by the treatment group, and the red bars show the same for the control group. There are significant gaps between the sustainable consumption decisions of the two groups, except in the cases of information provision and herd mentality. Hence, the nudges that are observed to be the most effective are product labelling (as sustainable) and positive positioning of products (in the centre of the screen). It appears that the provision of information only has a negligible impact on motivating patients to purchase sustainable products.

Figure 1: *Sustainable consumption and total attitude scores of the control and treatment groups*



Source: Authors' calculation

Figure 2: *Percentage of sustainable purchases with and without behavioural interventions*

Source: Authors' calculation

4.2 LIMITATIONS

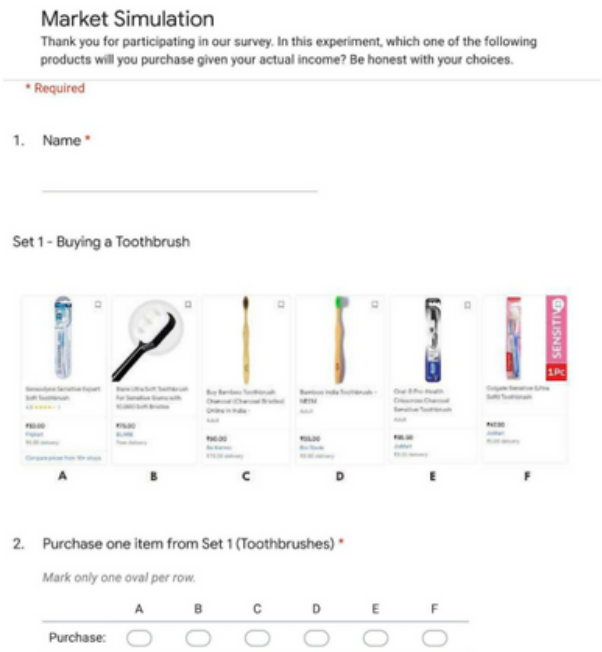
We observed a significant difference in the average sustainable purchase score values between the treatment and control groups, with a confidence level of 95%. We might have to see how we can modify our nudges in an effective way for the results to be more statistically significant. It is possible that participants might have been more conscious of the choices they made in the survey if they knew that they were being observed in a certain context—pro-environmental choices—as propounded by the Hawthorne effect. To overcome this limitation, we first collected the responses for the market simulation experiments studying their behaviour, followed by collecting data on their attitudes through the VBN framework, so that they would not be conscious of their choices and could respond genuinely. Another limitation could be that the participants might not have been completely honest in responding to the questions in the survey. We tried to reduce the possibility of such an occurrence by encouraging them to answer truthfully.

5. CONCLUSION

The Value Belief and Norms (VBN) framework helps to explain the relationship between an individual's values, beliefs, and norms and their stance on environmental issues, in our case, the consumption of sustainable products. We conclude with 95% confidence that there exists a gap between sustainable consumption attitudes and behaviours in the control group and the treatment group. This, combined with the fact that both groups scored similarly in the attitude section, implies that people with similar attitudes are most likely to have differing purchasing decisions depending only on which group (control or treatment) they get assigned to, i.e., whether or not they are exposed to the behavioural interventions. The treatment group in our study made more environmentally friendly choices than the control group, suggesting the high effectiveness of behavioural interventions in the context of sustainable consumption. We also observed that product labelling and positive positioning are the more effective behavioural interventions, while the bandwagon effect or herd mentality and information provision were less effective. Further studies can look into how these behavioural interventions can be enhanced to yield better results on the basis of the identified limitations and explore whether certain demographic factors encourage or inhibit the effectiveness of such interventions.

APPENDIX

Market Simulation Forms sent to the treatment group:


Market Simulation

Thank you for participating in our survey. In this experiment, which one of the following products will you purchase given your actual income? Be honest with your choices.

* Required

1. Name *

Set 1 - Buying a Toothbrush

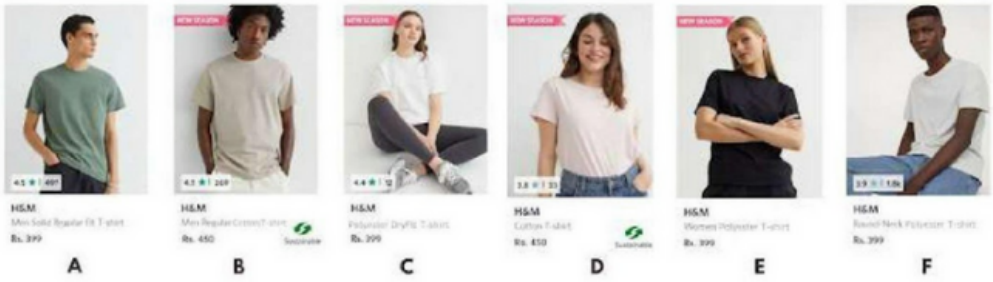
A B C D E F

2. Purchase one item from Set 1 (Toothbrushes) *

Mark only one oval per row.

	A	B	C	D	E	F
Purchase:						

Set 2 - Buying a T-shirt

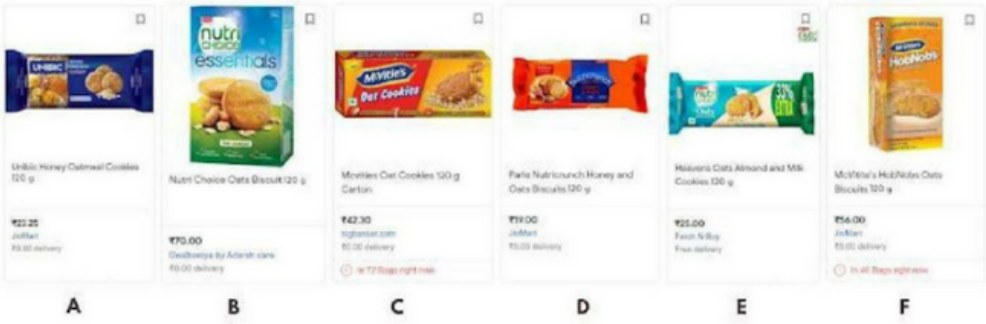


3. Purchase one item from Set 2 (T-shirts) *

Mark only one oval per row.

	A	B	C	D	E	F
Purchase:	◯	◯	◯	◯	◯	◯

Set 3 - Buying Biscuits

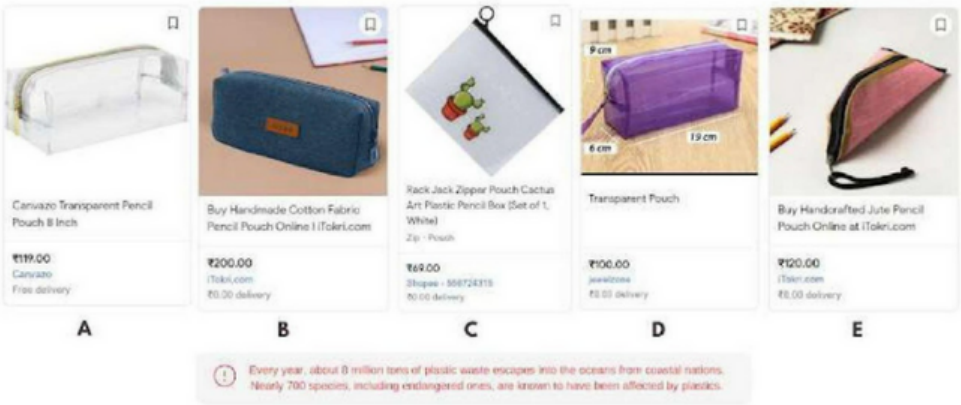


4. Purchase one item from Set 3 (Biscuits) *

Mark only one oval per row.

	A	B	C	D	E	F
Purchase:	◯	◯	◯	◯	◯	◯

Set 4 - Buying a Stationery Pouch



5. Purchase one item from Set 4 (Pouches) *

Mark only one oval per row.

	A	B	C	D	E
Purchase:	◯	◯	◯	◯	◯

Market Simulation Forms sent to the control group:

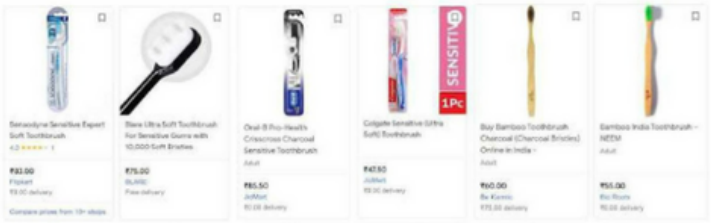
Market Simulation

Thank you for participating in our survey. In this experiment, which one of the following products will you purchase given your actual income? Be honest with your choices.

* Required

1. Name *

Set 1 - Buying a Toothbrush



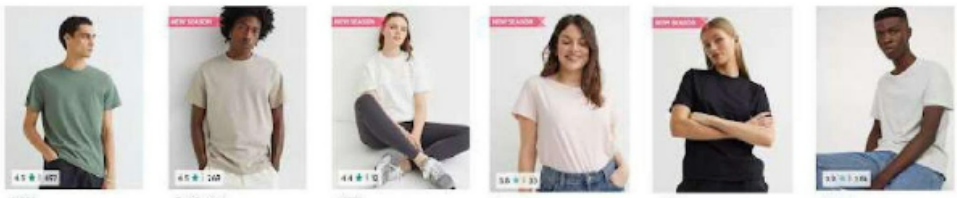
A B C D E F

2. Purchase one item from Set 1 (Toothbrushes) *

Mark only one oval per row.

	A	B	C	D	E	F
Purchase:	◯	◯	◯	◯	◯	◯

Set 2 - Buying a T-shirt



A B C D E F

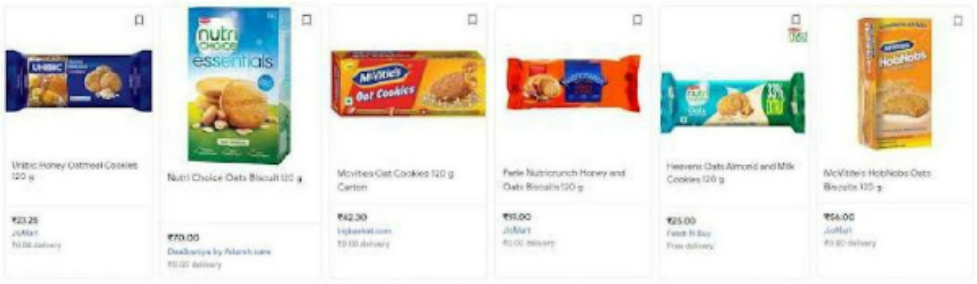
3. Purchase one item from Set 2 (T-shirts) *

Mark only one oval per row.

	A	B	C	D	E	F
Purchase:	◯	◯	◯	◯	◯	◯

Market Simulation Forms sent to the control group:

Set 3 - Buying Biscuits



4. Purchase one item from Set 3 (Biscuits) *

Mark only one oval per row.

	A	B	C	D	E	F
Purchase:	◯	◯	◯	◯	◯	◯

VBN Questionnaire sent to both treatment and control group:

6. Values *

How important are the following values for you?

Mark only one oval per row.

	Not important	Slightly important	Moderately important	Important	Very important
Equality [Humans, animals, and plants are all equal]	◯	◯	◯	◯	◯
Liberty [To do or be as you please without being oppressed]	◯	◯	◯	◯	◯
Social Justice [Justice needs to be served to the right]	◯	◯	◯	◯	◯
Unity with Nature [The issues of nature are our issues]	◯	◯	◯	◯	◯
Respecting the Earth	◯	◯	◯	◯	◯
Curiosity [To learn new things about the environment]	◯	◯	◯	◯	◯
Openness to Change	◯	◯	◯	◯	◯
Influence [Having an impact on people and events]	◯	◯	◯	◯	◯

Beliefs

To what extent do you agree with the following beliefs?

7. I believe- *

Mark only one oval per row.

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
Climate change is real					
I have a role to play to save the environment.					
Consumption of sustainable products will save the planet					
Not only the government and industries, I too am responsible for environmental deterioration.					
I feel jointly responsible for learning about climate change.					

Norms

Do you agree with the following:

8. *

Mark only one oval per row.

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I feel guilty when I buy products with multiple layers of plastic packaging					
I feel obliged to learn about the environmental issues					
I feel I must do something to help future generations.					
I feel that it is my responsibility to protect the environment.					
My friends want me to act environmentally conscious.					
My family wants me to act environmentally conscious.					
Most people in my social circle think it is important to buy green products.					
I feel obliged to pay attention to the environmental impact of the products I purchase					

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