

2019 Research Report
UC Business School & ChristchurchNZ



Sustainability



Survey of International
Visitors on Perceptions
of Sustainability in the
Canterbury Region



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Executive Summary

This report presents the findings from a survey of 616 international visitors departing from Christchurch International Airport (CIAL) in February/March 2019. The findings are organised into four sections. The first and second sections present the demographic and travelling characteristics of the sample as well as the environmental attitudes and values of international visitors. In the third section, the ratings of environmental practices of different sectors such as accommodation, attraction, and transport providers as well as public infrastructure are presented with the aim of ascertaining the environmental practices and behaviours that international visitors engage with in the region. Finally, the practices and organisations visitors perceived as excellent in relation to sustainability initiatives are presented. Thus, enabling the identification of international visitors' best and worst perceived environmental practices of tourism businesses in the Canterbury region.

The majority of international visitors surveyed were visiting Canterbury for the first time for either holiday or leisure purposes. These visitors were well educated. In respect to environmental attitudes and values, the majority of visitors indicated a strong preference for protecting the natural environment, living in harmony with other species and understanding local culture. However, actual engagement in environmental practices tended to focus on consumption behaviours such as energy use, recycling, and purchasing local food as opposed to those directed at local flora and fauna, and engaging with local people and cultures. Moreover, the majority of visitors perceived practices such as recycling and waste management, availability of public toilets, and advocacy of clean and rubbish free spaces to be implemented across all major sectors including accommodation, transportation, attraction providers and public infrastructure. In contrast, carbon-offsetting initiatives were consistently perceived as the least adopted environmental practice across all sectors. In keeping with the above findings,

recycling and waste management, protection of wildlife and the natural environment, and responsible water use and conservation were perceived as the most notable sustainability practices in the Canterbury region with businesses perceived as excellent in their sustainability initiative including the Department of Conservation and the University of Canterbury.

The findings have implications for 7 of the 14 goals with respect to sustainability commitments of the tourism industry in New Zealand. Based on the data analysis, it is recommended that:

- Tourist education campaigns should focus on providing information on practices such as using eco-friendly and alternative transportation, carbon-offset schemes and purchasing eco-friendly products to increase visitor engagement.
- Operators across all sectors should make improvements to how they communicate and engage visitors to undertake responsible waste disposal.
- Implementation of sustainable practices should focus on those that offer clear time-saving benefits in order to encourage more sustainable behaviour of tourists who are time poor while on holiday.
- The transportation sector in particular was perceived as the least engaged in implementing environmental practices and should focus on improving or better managing visitors' perceptions. Moreover, public transportation use should be promoted and incentivised, such as through information and communication strategies targeted towards tourists, in order to mitigate negative perceptions and increase participation.
- Visitors were shown to have high engagement in practices such as recycling, conserving energy, and saving water. However, tourists need to be sensitised about other practices such as waste management, noise pollution, and low-carbon initiatives. Low-carbon and

carbon offsetting opportunities in particular should be readily available and be built into pricing structures in order to be most effective.

- Given the significance of tourist perceptions for destination, business and product viability it is vital that a better understanding of tourist perceptions and their relationship to empirical indicators of sustainability are systematically assessed and better tracked over time and replace the piecemeal approach that has occurred in the past.
- Practices that enable emissions reduction and low-carbon forms of tourism, such as greater use of public transport, require further promotion and, potentially, improved contributions from government at all levels to provide infrastructure that enables visitors to engage in sustainable practices in an easier fashion. Most importantly information regarding sustainability practices needs to be better communicated to tourists and industry.



Introduction

Following the findings from Report 1, which examined visitors' perceptions of sustainability from user-generated content (UGC) and the International Visitor Survey (IVS) data, this report presents the findings from a survey of international visitors departing from Christchurch International Airport (CIAL). As specified in the Aotearoa New Zealand Government Tourism Strategy, sustainable growth of the tourism industry is a key facet of the government's economic goals. According to 2017 International Visitor Survey data, nine out of 10 international visitors said they were highly satisfied with the New Zealand experience, with 94 per cent saying that New Zealand met or exceeded their expectations. As Report 1 indicated, environmental practice ratings (EPRs) from the IVS data have remained almost the same over the last four years. Chinese visitors have the most positive perceptions of the overall environmental management practices in New Zealand with German visitors having the least. Visitors staying longer than three months have the worst perceptions of all EPRs while younger visitors have better perceptions of all EPRs. Perceptions of EPRs improve significantly with higher levels of satisfaction. Given the broad nature of the EPRs measured in IVS, it is difficult to ascertain what sustainable behaviours do

international tourists value and how they would rate the sustainability commitments of tourism and hospitality providers in the Canterbury region.

The main objectives of this report are three-fold:

1. To identify the environmental attitudes and values of international visitors to the Canterbury region
2. To ascertain the environmental practices and behaviours that international visitors engaged in while visiting the region
3. To identify international visitors' best and worst perceived environmental practices of tourism businesses in the region

By fulfilling these three objectives, the report offers insights into environmental practices that are valued by international visitors that complement the findings from the analysis of IVS data from Report 1. The findings also pinpoint to any significant gaps between perceptions and actual behaviour related to environmental practices. Recommendations are offered on the basis of the survey findings.

Method

The data underlying this report were gathered as follows.

Sampling and Data Collection

The target population for this survey was defined as international visitors above the age of 18 years old visiting the Canterbury region and departing from CIAL. Five trained interviewers from the University of Canterbury approached international visitors on a convenience basis over a period of two months (February and March 2019), including weekdays and weekends. With a 5% error margin and 95% confidence interval, the minimum sample size for reliable results was estimated at 484 visitors. At the end of data collection, 616 useable questionnaires were obtained.

Questionnaire Design and Pre-test

The survey was designed using the findings from Report 1 as well as established measures of environmental attitudes and values from previous international studies on tourist attitudes and behaviours in relation to sustainability (Adorin et al., 2015; Ballantyne, Packer & Falk, 2011; Lee & Jan, 2015; Poudel & Nyaupane, 2013). Beyond these, the usual demographic and travelling characteristics such as age, gender, purpose of visit, and type of accommodation they stayed at were also measured.

The environmental behaviours and practices that international visitors engaged in were measured using 17 statements as indicated in Table 1, on a five-point Likert scale. These were identified partly from Report 1 and also international studies on the topic (e.g., Jacobsen, 2007).

While travelling in the Canterbury region, I...	Not at all	Little	Neither Much nor Little	Much	Very Much
Bought eco-friendly products	1	2	3	4	5
Used energy-saving practices, i.e. turned lights and/or electrical equipment off and when not in my accommodation	1	2	3	4	5
Used water-saving practices	1	2	3	4	5
Used eco-friendly transport	1	2	3	4	5
Reduced consumption of non-essential items	1	2	3	4	5
Engaged with local people to understand their culture	1	2	3	4	5
Donated money to support local causes	1	2	3	4	5
Used an electric vehicle to travel around	1	2	3	4	5
Engaged in responsible disposal of waste	1	2	3	4	5
Reduced consumption of plastics	1	2	3	4	5
Recycled plastic, glass and paper products	1	2	3	4	5
Used a carbon off-set scheme	1	2	3	4	5
Purchased local food wherever possible, i.e. food from the Canterbury region	1	2	3	4	5
Purchased food grown in New Zealand wherever possible	1	2	3	4	5
Used public transport	1	2	3	4	5
Used a bicycle	1	2	3	4	5
Used walking tracks and paths instead of using motorised transport	1	2	3	4	5
Engaged with natural attractions to support endangered plants and animals	1	2	3	4	5

Table 1: Environmental behaviours and practices measured

Method

As shown in Table 2, 25 statements related to environmental attitudes and values were measured on a five-point Likert scale.

Environmental Values and Attitudes	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I feel strongly about protecting nature and the environment	1	2	3	4	5
I respect the earth and live in harmony with other species and the natural environment	1	2	3	4	5
When I travel I try to choose tourism services and products that preserve the environment	1	2	3	4	5
When I travel I try to choose tourism services and products that preserve local culture	1	2	3	4	5
When I travel I try to choose tourism services and products that enhance the way of life of local communities.	1	2	3	4	5
When I travel I try to choose tourism services and products that actively reduce light and noise pollution	1	2	3	4	5
When I travel I try to choose tourism services and products that encourage reduce, reuse and recycle	1	2	3	4	5
When I travel I try to choose tourism services and products that actively encourage water conservation and wastewater reduction	1	2	3	4	5
When I travel I try to choose tourism services and products that actively encourage energy conservation	1	2	3	4	5
When I travel I try to choose tourism services and products that actively lower greenhouse gas emissions	1	2	3	4	5
When I travel I try to choose tourism services and products that actively promote wildlife protection	1	2	3	4	5
When I travel I try to choose tourism services and products that actively promote Fair Trade	1	2	3	4	5
When I travel I try to use public transport	1	2	3	4	5
Too many tourists in a place can be harmful to the environment	1	2	3	4	5
Too many tourists in a place can be harmful to the community	1	2	3	4	5
Too many tourists in a place can be harmful to my own visitor experience	1	2	3	4	5
As a visitor, I need to be aware of the local socio-cultural rules and regulations	1	2	3	4	5
I try to adopt energy conservation strategies (e.g. electricity) when travelling	1	2	3	4	5
I try to save water when I travel	1	2	3	4	5
I tend to buy environmentally friendly products when I travel	1	2	3	4	5
I tend to use eco-friendly accommodation when I travel	1	2	3	4	5
I tend to use eco-friendly transport options when I travel	1	2	3	4	5
I am aware of the pollution that I can create as a tourist when I travel	1	2	3	4	5
I am aware of the emissions that I can create as a tourist when I fly	1	2	3	4	5
When I travel I try to choose tourism services and products that actively promote a living wage	1	2	3	4	5

Table 2: Environmental values and attitudes measured

Method

To further understand the environmental practices and behaviours that international visitors engaged in, they were asked to identify whether the practices in Table 3, were evident in the accommodation they stayed at, the public infrastructure that they used in general, the activities/attractions they visited and the most common mode of transport they used.

Finally, international visitors were asked to identify five sustainability practices that they thought were excellent in the Canterbury region and to name three businesses/organizations that they thought epitomized such excellence.

Environmental Practices	Accommodation		Public Infrastructure		Activities/Attractions		Most common mode of Transport	
	Yes	No	Yes	No	Yes	No	Yes	No
Water-saving initiatives	Yes	No	Yes	No	Yes	No	Yes	No
Energy-saving initiatives	Yes	No	Yes	No	Yes	No	Yes	No
Recycling initiatives	Yes	No	Yes	No	Yes	No	Yes	No
Waste management initiatives	Yes	No	Yes	No	Yes	No	Yes	No
Low-carbon initiatives	Yes	No	Yes	No	Yes	No	Yes	No
Protective measures for plants and animals	Yes	No	Yes	No	Yes	No	Yes	No
Encouragement of low noise levels	Yes	No	Yes	No	Yes	No	Yes	No
Encouragement of clean and rubbish free spaces	Yes	No	Yes	No	Yes	No	Yes	No
Crowd management	Yes	No	Yes	No	Yes	No	Yes	No
Availability of public toilets	Yes	No	Yes	No	Yes	No	Yes	No
Encourage responsible use of water	Yes	No	Yes	No	Yes	No	Yes	No
Carbon offsetting	Yes	No	Yes	No	Yes	No	Yes	No
Use of local food	Yes	No	Yes	No	Yes	No	Yes	No
Encouraged use of public transport	Yes	No	Yes	No	Yes	No	Yes	No

Table 3: Environmental practices measured by main sector



Findings

The findings are organized into four sub-sections. In the first, the demographic and travelling characteristics of the sample are presented. In the second, the environmental attitudes and values of international visitors are reported. In the third section, the environmental practices and behaviours of international visitors. In the last section, the top five sustainability practices for region and the best sustainability initiatives of businesses as perceived by international visitors are presented.

Sample Demographic and Travelling Characteristics

Table 4 shows slightly more female (59%) international visitors were surveyed than males (41%). The majority of surveyed visitors were in the age groups 18-24 (34%) and 25-34 (34%). The sample was well educated with 19% having completed and undergraduate degree with a further 39% having completed a post-graduate degree. A high percentage of visitors surveyed were from China (26%), Australia (17%) and Germany (15%). In comparison to the 2017/2018 weighted visitor population New Zealand (see Table 4), the sample from Canterbury has a similar gender split with the IVS data but differs substantially on age, and country-of-residence of visitors. The sample in this study has a higher percentage of young visitors from China and Germany, with a lower percentage of visitors from Australia.

Demographic	Freq.	Percent	Population Freq.	Population Percent
Gender				
Male	251	40.75	3,318,420	49.5
Female	365	59.25	3,381,801	50.5
Age				
18-24	215	34.13	772,139	11.6
25-34	214	33.97	1,481,491	22.2
35-44	52	8.25	1,132,079	16.9
45-54	48	7.62	1,207,443	18.0
55-64	49	7.78	1,352,121	20.2
65+	52	8.25	732,610	11.0
Education				
High school graduate or less	108	17.22		
Undergraduate degree completed	119	18.98		
Post-graduate degree completed	244	38.92		
Doctoral degree	48	7.66		
Professional qualification	99	15.79		
Other	9	1.44		
Country of Residence				
UK	61	9.73	441,124	6.6
US	31	4.94	605,032	9.0
Germany	92	14.67	194,955	2.9
Australia	106	16.91	2,649,657	39.6
China	164	26.16	794,100	11.9
France	28	4.47	86,471	1.3
Malaysia	4	0.64	162,972	2.4
Other	141	22.49	1,765,910	26.3

Table 4: Sample Demographic Characteristics

Findings

Table 5 shows that the majority of visitors were first-timers to the Canterbury region (71%). The main purpose of visit was for leisure/holiday purposes (70%) and education purposes (15%). Interestingly, 29% of visitors stayed in hotels compared to 25% in Airbnb. A notable number of visitors were either freedom camping (16%) or backpackers (16%). These figures show substantial differences in the visitor profile to the Canterbury region from the sample as opposed to IVS figures at the national level (see Table 5). A high percentage of international visitors was travelling with either their spouse/partner (36%) or with friends (25%).

Demographic	Freq.	Percent	Population Freq.	Population Percent
Number of Visits				
No previous visits	442	70.83	3,335,001	49.8
1 time	88	14.10	930,139	13.9
2 times	31	4.97	503,302	7.5
3 times	21	3.37	274,354	4.1
4 times	7	1.12	237,607	3.6
More than 4 times	35	5.61	1,419,818	21.1
Purpose of Visit				
Leisure/Holidays	434	69.99		
Attending an event	9	1.44		
Visiting friends and relatives	48	7.70		
Business	10	1.61		
Education	95	15.25		
Freedom Camping	14	2.25		
Other	13	2.09		
Accommodation Type				
Hotel	180	28.62	1,681,172	25.1
Airbnb	159	25.28	459,891	6.9
Freedom Camping	103	16.38	59,179	0.9
Backpackers	101	16.06	204,036	3.1
Bed & Breakfast	35	5.56	237,728	3.6
Private Accommodation	59	9.38	1,743,276	26.0
Motel	85	13.51	844,825	12.6
Other	175	27.82	2,983,114	44.2
Travelling Companion(s)				
Alone	57	9.06		
With your Spouse/Partner	228	36.25		
With Family Members	122	19.40		
With Friends	158	25.12		
Organised Tour	64	10.17		
Other	35	5.56		

Table 5: Sample Travelling Characteristics

Findings

Environmental Attitudes and Values

Of the 25 statements, 10 were rated on average as 'Neither Agree nor Disagree' to 'Agree', while the remaining statements were rated on average as 'Agree' to 'Strongly Agree'. The statements 'I feel strongly about protecting nature and the environment' (1), 'I respect the earth and live in harmony with other species and the natural environment' (2), and 'As a visitor, I need to be aware of the local socio-cultural rules and regulation' (17) had the highest mean scores of 4.67, 4.63, and 4.51 respectively indicating that the average response was 'Agree' or 'Strongly Agree'. However, the third statement (17) was polarising with the majority of respondents indicating either they 'Disagree' or 'Strongly Agree' with this statement or they 'Agree' to 'Strongly Agree', which explains the average score for this statement. The mean score for this item needs to be interpreted, therefore, with caution. The statements 'I tend to use eco-friendly transport options when I travel' (22), 'I tend to use eco-friendly accommodation when I travel' (21), and 'When I travel I try to use public transport' (13) had the lowest mean scores of 3.46, 3.49, and 3.52 respectively which would indicate that the average response to these statements was 'Neither Agree nor Disagree'. However, when looking at the respective percentages for these statements it is clear that participants were varied in their attitudes with responses spreading across the 'Neither Agree nor Disagree', 'Agree' and 'Strongly Agree' options. This is particularly the case for statement (13).

Of interest is that there are statistically significant differences in the average scores by gender on 11 of the 25 statements. For example on statement 8, the average score for males (3.9) is lower than that for females (4.1). On statement 18, the average score for males (3.9) is lower than that for females (4.2). There are also statistically significant differences on 23 of the 25 statements in Table 5 by country of residence (except for statements 15 and 25).

Environmental Practices of International Visitors

Of the 18 environmental practices measured in this study, only four practices on average scored four and above (environmental practices 2, 3, 11 and 14). The practices 'Used energy-saving practices' (2), 'Recycled plastic, glass and paper products' (11), and 'Purchased food grown in New Zealand wherever possible' (14) had the highest mean scores of 4.40, 4.18, and 4.15 respectively indicating that the average participation in these activities was 'Much' or 'Very Much', with practice (2) leaning more towards 'Very Much'. The practices 'Used a bicycle' (16), 'Used an electric vehicle to travel around' (8), and 'Donated money to support local causes' (7) had the lowest mean scores of 1.71, 1.81, and 2.26 respectively indicating that the average participation in these activities was 'Not at all' or 'Little'. However, from the respective percentages it is clear that the majority of participants indicated that they did 'Not at all' engage in these practices. The average scores for this question highlights the much talked about gap in attitude and behaviour with respect to sustainability practices. While international visitors to the Canterbury region tend to have strong environmental attitudes and values as indicated in section 3.2, these do not translate in actual behaviour as indicated by the low uptake of the behaviours measured in Table 7.

There were significant differences between the mean scores of male and female visitors on 6 of the 18 environmental practices measured as indicated in Table 7. For example, male visitors on average had a slightly lower (2.75) uptake of buying eco-friendly products (item 1) compared to female visitors (2.96). Female visitors had on average (4.52) a higher uptake of energy saving practices (item 2) compared to male visitors (4.25). There were also statistically significant differences in the uptake of these environmental practices by country of residence. Such differences existed on 16 of the 18 environmental practices with the exceptions being items 7 (donated money to support local causes) and 10 (reduced consumption of plastics).

No.	Environmental Values	Strongly Disagree (%)	Disagree (%)	Neither Agree nor Disagree (%)	Agree (%)	Strongly Agree (%)	Mean (%)
1	I feel strongly about protecting nature and the environment	0.32	0.64	1.75	26.39	70.91	4.67
2	I respect the earth and live in harmony with other species and the environment	0.16	0.32	3.33	28.89	67.30	4.63*
17	As a visitor, I need to be aware of the local socio-cultural rules and regulations	0.16	79.00	6.51	32.86	59.68	4.51*
11	When I travel I try to choose tourism services and products that actively promote wildlife protection	1.59	1.90	13.81	33.49	49.21	4.27
14	Too many tourists in a place can be harmful to the environment	1.75	4.77	13.67	28.62	51.19	4.23
19	I try to save water when I travel	-	4.29	14.29	38.89	42.54	4.20*
4	When I travel to choose tourism services and products that preserve local culture	1.59	1.27	17.78	39.21	40.16	4.15
7	When I travel I try to choose tourism services and products that actively encourage reduce, reuse and recycle	1.43	3.02	18.73	37.30	39.52	4.10
18	I try to adopt energy conservation strategies (e.g. electricity) when travelling	0.16	4.13	18.10	40.48	37.14	4.10*
5	When I travel to choose tourism services and products that enhance the way of life of local communities	1.59	1.43	20.00	40.00	36.98	4.09*
3	When I travel to try to choose tourism services and products that preserve the environment	0.95	2.38	20.95	40.79	34.92	4.06
16	Too many tourists in a place can be harmful to my own visitor experience	2.70	6.20	16.06	33.07	41.97	4.05
23	I am aware of the pollution that I can create as a tourist when I travel	1.59	3.66	21.94	33.86	38.95	4.05
8	When I travel I try to choose tourism services and products that actively encourage water conservation and wastewater reduction	1.43	3.65	23.17	35.08	36.67	4.02*
24	I am aware of the emissions that I can create as a tourist when I fly	2.07	5.88	24.17	27.19	40.70	3.99
9	When I travel to choose tourism services and products that actively encourage energy conservation	1.90	3.49	26.83	36.03	31.75	3.92
12	When I travel I try to choose tourism services and products that actively promote Fair Trade	1.91	4.13	27.82	35.61	30.52	3.89
20	I tend to buy environmentally friendly products when I travel	2.07	5.41	26.39	37.52	28.62	3.85*
10	When I travel I try to choose tourism services and products that actively lower greenhouse gas emissions	1.43	4.92	32.06	32.86	28.73	3.83
6	When I travel I try to choose tourism services and products that actively reduce light and noise pollution	2.38	6.51	32.38	30.00	28.73	3.76*
15	Too many tourists in a place can be harmful to the community	4.29	8.74	29.41	29.25	28.30	3.69
25	When I travel I try to choose tourism services and products that actively promote a living wage	2.71	4.62	38.69	29.94	24.04	3.68
13	When I travel I try to use public transport	5.56	13.81	28.57	26.83	25.24	3.52*
21	I tend to use eco-friendly accommodation when I travel	5.24	6.83	40.32	28.73	18.89	3.49*
22	I tend to use eco-friendly transport options when I travel	4.45	9.54	39.90	27.66	18.44	3.46*

Table 6: Environmental attitudes and values

*denotes a significant difference between average score for males and females at 0.05 level

Findings

No.	Environmental Practices (Visitors)	Not at all (%)	Little (%)	Neither Much nor Little (%)	Much (%)	Very Much (%)	Mean
2	Used energy-saving practices, i.e. turned lights and/or electrical equipment off and when not in my accommodation	1.59	3.02	9.38	25.76	60.25	4.40*
11	Recycled plastic, glass and paper products	2.39	4.78	12.10	34.39	46.34	4.18
14	Purchased food grown in New Zealand wherever possible	1.59	5.10	16.56	30.57	46.18	4.15
3	Used water-saving practices	2.54	5.88	18.92	31.96	40.70	4.02*
13	Purchased local food wherever possible, i.e. food from the Canterbury region	2.86	7.46	19.68	35.87	34.13	3.91
17	Used walking tracks and paths instead of using motorised transport	5.40	12.06	15.56	26.03	40.95	3.85
5	Reduced consumption of non-essential items	2.40	6.39	26.68	35.94	28.59	3.82
9	Engaged in responsible disposal of waste	9.70	9.38	16.53	29.89	24.40	3.70
10	Reduced consumption of plastics	4.30	12.10	22.29	35.19	26.11	3.67
6	Engaged with local people to understand their culture	6.68	14.51	21.85	33.97	23.97	3.53
18	Engaged with natural attractions to support endangered plants and animals	12.06	14.92	18.57	29.05	25.40	3.41
4	Used eco-friendly transport	13.81	17.94	28.73	20.79	18.73	3.13*
1	Bought eco-friendly products	14.49	21.82	32.96	22.77	7.96	2.88*
15	Used public transport	28.57	19.84	18.57	12.70	20.32	2.76*
12	Used a carbon off-set scheme	38.02	13.90	29.23	10.22	8.63	2.38
7	Donated money to support local causes	35.87	26.51	19.84	11.75	6.03	2.26
8	Used an electric vehicle to travel around	63.28	12.56	10.81	6.20	7.51	1.81*
16	Used a bicycle	68.41	12.38	5.87	6.35	6.98	1.71

Table 7: Environmental practices of visitors

*denotes a significant difference between average score for males and females at 0.05 level

Findings

International Visitors' Perceptions of Environmental Practices Adopted by the Industry

Table 8 shows that 83.1% of international visitors perceived that accommodation providers in the Canterbury region encouraged practices that led to clean and rubbish free spaces. They also perceived that accommodation providers had environmental practices/initiatives in place that encouraged recycling (77.9%), waste management (74.6%) and responsible use of water (72.2%). However, they perceived that only 43.7% had crowd management initiatives in place and 23.3% had carbon-offsetting schemes. The latter being perceived as the least adopted environmental initiative of accommodation providers.

Table 9 shows that for public infrastructure providers, international visitors perceived that 76.2% and 70.6% had recycling and waste management initiatives respectively in place. They also perceived facilities for public toilets (83.3%) were available. Availability of carbon offsetting schemes remain a weakness (30.7%).

No.	Environmental Practices (Supplier)	Yes (%)	No (%)	N/A (%)
8	Encouragement of clean and rubbish free spaces	83.17	7.46	9.37
3	Recycling initiatives	77.94	15.87	6.19
10	Availability of public toilets	76.51	8.57	14.92
4	Waste management initiatives	74.60	13.17	12.22
11	Encourage responsible use of water	72.22	19.05	8.73
2	Energy-saving initiatives	66.67	25.56	7.78
13	Use of local food	63.49	20.00	16.51
1	Water-saving initiatives	63.02	27.78	9.21
7	Encouragement of low noise levels	60.32	26.51	13.17
6	Protective measures for plants and animals	56.35	23.02	20.63
9	Crowd management	43.81	29.68	26.51
14	Encouraged use of public transport	40.16	40.63	19.21
5	Low-carbon initiatives	35.08	39.68	25.24
12	Carbon offsetting	23.33	44.29	32.38

Table 8: International Visitors' Perceptions of Environmental Practices/Initiatives of Accommodation Providers

No.	Environmental Practices (Supplier)	Yes (%)	No (%)	N/A (%)
10	Availability of public toilets	83.33	7.62	9.05
8	Encouragement of clean and rubbish free spaces	79.37	8.41	12.22
3	Recycling initiatives	76.19	13.33	10.48
4	Waste management initiatives	70.63	13.49	15.87
6	Protective measures for plants and animals	65.61	14.84	19.59
11	Encourage responsible use of water	62.64	22.42	14.94
2	Energy-saving initiatives	58.41	23.05	17.94
13	Use of local food	56.12	21.62	22.26
1	Water-saving initiatives	56.03	25.24	18.73
7	Encouragement of low noise levels	53.26	28.91	17.81
14	Encouraged use of public transport	47.14	33.65	19.21
9	Crowd management	46.10	30.03	23.85
5	Low-carbon initiatives	39.21	33.49	27.30
12	Carbon offsetting	30.16	39.05	30.79

Table 9: International Visitors' Perceptions of Environmental Practices/Initiatives of Public Infrastructure Providers

Findings

Table 10 shows that international visitors perceived attraction providers in the Canterbury region to have recycling (74.1%), protective measures in place for plants and animals (76.5%), encourage clean and rubbish free spaces (80.5%) and availability of public toilets (83.8%). However, only 41.8% encouraged use of public transport.

Table 11 shows that transport providers were perceived as having the lowest environmental practices/initiatives in place with recycling initiatives (45.1%), encouragement of clean and free rubbish free spaces (60.5%), and encouraged use of public transport (37%).

No.	Environmental Practices (Supplier)	Yes (%)	No (%)	N/A (%)
10	Availability of public toilets	83.81	5.87	10.32
8	Encouragement of clean and rubbish free spaces	80.49	8.57	10.95
6	Protective measures for plants and animals	76.51	8.73	14.76
3	Recycling initiatives	74.09	13.67	12.24
4	Waste management initiatives	66.67	14.76	18.57
11	Encourage responsible use of water	62.48	22.58	14.94
1	Water-saving initiatives	58.19	23.37	18.44
2	Energy-saving initiatives	56.83	21.75	21.43
13	Use of local food	56.60	21.14	22.26
7	Encouragement of low noise levels	53.42	27.98	18.60
9	Crowd management	50.79	27.94	21.27
14	Encouraged use of public transport	41.75	36.03	22.22
5	Low-carbon initiatives	37.68	32.91	29.41
12	Carbon offsetting	29.21	37.62	33.17

Table 10: International Visitors' Perceptions of Environmental Practices/Initiatives of Activity and Attraction Providers

No.	Environmental Practices (Supplier)	Yes (%)	No (%)	N/A (%)
10	Availability of public toilets	83.81	5.87	10.32
8	Encouragement of clean and rubbish free spaces	80.49	8.57	10.95
6	Protective measures for plants and animals	76.51	8.73	14.76
3	Recycling initiatives	74.09	13.67	12.24
4	Waste management initiatives	66.67	14.76	18.57
11	Encourage responsible use of water	62.48	22.58	14.94
1	Water-saving initiatives	58.19	23.37	18.44
2	Energy-saving initiatives	56.83	21.75	21.43
13	Use of local food	56.60	21.14	22.26
7	Encouragement of low noise levels	53.42	27.98	18.60
9	Crowd management	50.79	27.94	21.27
14	Encouraged use of public transport	41.75	36.03	22.22
5	Low-carbon initiatives	37.68	32.91	29.41
12	Carbon offsetting	29.21	37.62	33.17

Table 11: International Visitors' Perceptions of Environmental Practices/Initiatives of Transport Providers

Findings

Table 12 provides a comparison of rankings of the perceived adoption of environmental practices and initiatives by different tourism industry sectors. The results reveal that several practices were perceived as being of similar relative importance across the sectors despite differences in perceived adoption within a sector. The practices that were perceived as being the most widely adopted were encouragement of clean and rubbish free spaces, availability of public toilets (although transport lagged behind here), recycling and waste management. Carbon offsetting, low-carbon initiatives, encouragement of public transport and crowd management all ranked poorly, with carbon offsetting ranked last in all four sectors.

Environmental Practices	Accommodation	Public Infrastructure	Activities/Attractions	Most common mode of Transport
Water-saving initiatives	8	9	7	12
Energy-saving initiatives	6	7	8	3
Recycling initiatives	2	3	4	2
Waste management initiatives	4	4	5	3
Low-carbon initiatives	13	13	13	10
Protective measures for plants and animals	10	5	3	7
Encouragement of low noise levels	9	10	10	9
Encouragement of clean and rubbish free spaces	1	2	2	1
Crowd management	11	12	11	13
Availability of public toilets	3	1	1	6
Encourage responsible use of water	5	6	6	5
Carbon offsetting	14	14	14	14
Use of local food	7	8	9	8
Encouraged use of public transport	12	11	12	11

Table 12: Comparison of rankings of perceived adoption of environmental practices/initiatives

Findings

Overall Perceptions of Environmental Practices in the Canterbury Region

International visitors were asked to identify up to five sustainable practices that they thought were excellent in the region. The answers were coded into main categories as shown in Table 13. Recycling and waste management practices were the most common answers (26.1%) followed by protection of wild life and the natural environment (11.5%) and responsible water use and consumption (11.5%). The category of recycling and waste management includes answers such as waste disposal bins, encouragement for people to use reusable bags, garbage/rubbish recycling, and no polluting plastic bags in rivers.

Category	Frequency	Percent (%)
Recycling & Waste Management	303	26.08
Protection of Wildlife & Natural Environment	134	11.53
Responsible Water Use & Conservation	134	11.53
Use of Public Transportation, Hybrid/Electric Vehicles & Scooter/ Bike Sharing	107	9.21
Uncategorised	86	7.40
Removal of Plastic Bags & Promotion of Reusable Bags	62	5.34
Responsible Energy Use & Renewable Sources	47	4.04
Clean Environment	45	3.87
Availability of Public Restrooms	45	3.87
Promotion of Sustainable Food Practices & Local Food	37	3.18
Availability Green Space & Tree Planting	27	3.32
Management of Air Quality & Pollution	25	2.15
Use of Reusable Cutlery/Crockery	15	1.29
Quality of Transport Infrastructure	14	1.20
Population Density	13	1.12
Availability of Regulated and Freedom Camping	10	0.86
Management of Noise & Light Pollution	10	0.86
Accommodation Management	7	0.60
Paper Use & Restriction	6	0.52
Sustainable Tourism Development	6	0.52
Agriculture	6	0.52
Tourist Activities	6	0.52
Fire Restrictions	6	0.52
Shared Infrastructure/Coworking Spaces	4	0.34
Public Health & Exercise	2	0.17
Culture	2	0.17
Diet	1	0.09
Smokefree	1	0.09
Product Packaging	1	0.09

Table 13: Perceived Environmental Practices in the Canterbury Region



Recommendations

The findings have implications for 7 of the 14 commitments of the New Zealand's tourism sustainability commitments.

- **Carbon reduction** - Practices such as a carbon offsetting schemes were rated as a weakness across multiple sectors, however, it also had a low translation rate into actual tourist uptake with a mean of 2.38. These results reflect wider international research on offsetting as a practice to encourage more sustainable behaviours. Importantly carbon offsetting opportunities need to be readily available and ideally should be built in to pricing structures to be most effective. Alternatively, measures could be taken to focus improvement changes on activities that are already being promoted or undertaken that coincide with a translation into actual change in tourist behaviour. For example, tickets for transport, such as travelling on the TranzAlpine, could provide information on the carbon savings made by travelling to the West Coast by train as opposed to flying or travelling by car. Encouragement of low-carbon behaviour could also include further promotion of water and energy saving practices and recycling
- **Product and market development** – This commitment of tourism businesses to improve or upgrade their offering to enhance visitor experience can be seen from visitors' perceptions of the environmental practices of the accommodation and activity/attraction providers in particular. A high percentage of tourists responded affirmatively with respect to these sectors having in place environmental practices measured in this research.
- **Visitor engagement** – This commitment relates to businesses educating visitors about New Zealand's cultural and behavioural expectations. There is little evidence to support that businesses are educating visitors' about environmental practices in particular. In fact tourists seem to be knowledgeable with respect to five practices in particular (energy saving initiatives, recycling, purchase of local food and water-saving initiatives). However, there are several others (e.g., buying eco-friendly products, using eco-friendly transport, use of bicycle, use of public transport, and use of carbon-offset

schemes) that international visitors do not engage in much and these should be the focus of information provision and tourist education campaigns by businesses.

- **Sustainable supply chains** – This commitment relates to businesses having socially and environmentally sustainable supply chains. International visitors to the Canterbury region engage in practices that show preference for consuming locally produced food. The ratings for purchased local and nationally grown food where possible (mean=3.91 and 4.15 respectively) was relatively high but when compared to the rating given by visitors to the accommodation sector as well as others for the use of local food, suggest that businesses are not necessarily using the most sustainable supply chains. Promotion of sustainable food practices and local food was only mentioned as an excellent practice by 11.9% of respondents.

Recommendations

The substantial gap between interest and offering presents substantial opportunities for New Zealand producers who should be encouraged to better promote their products to tourists both directly and via food outlets, such as restaurants and cafés, and local farmer's market.

- **Ecological restoration** – one key commitment for the tourism industry in New Zealand is the desire for recognition of its contribution to protecting, restoring and enhancing New Zealand's natural environment and biodiversity. There is some evidence in this study that tourists value the efforts by tourism organizations and other businesses in terms of their commitment to this task (e.g., Whale Watch Kaikoura, CIAL and University of Canterbury) as well as those of government (e.g. DOC). Based on tourists' evaluation of environmental practices, there is still room for improvement. One of the eight goals of the tourism industry is to ensure that tourism businesses are measuring, managing and minimising their environmental footprint. At least from the perspective of visitors, there seems to be both strong and weak environmental practices in different sectors assessed in this study. Specifically, carbon footprint seems to be problematic across sectors.
- **Waste management** - this commitment relates to businesses having waste reduction and management programmes. From the findings it is clear that international visitors did engage in practices such as disposal of waste responsibly (mean=3.70) and reduced consumption of plastics (mean=3.67). However, these were not the practices ranked high in terms of their environmental behaviours. From Table 12, it can be seen that tourists ranked waste management initiatives of the various sectors as "middle of the road". There is an opportunity for all sectors to improve on how the communicate and encourage visitors to undertake waste disposal in a responsible way.

- **Education** – this commitment relates to businesses actively engage with their visitors and communities on the importance of restoring, protecting and enhancing New Zealand's natural environment. Given the significant gaps identified in this study between environmental values and practices engaged in by international visitors while visiting the region, a stronger focus on education will be required to reduce these gaps.

There was low incentivisation and usage of public transport. As seen in the findings of Table 11, transport providers were rated as the lowest in both recycling initiatives (45.1%) and encouragement of clean and free rubbish free spaces (60.5%) with environmental practices in transport generally more lowly rated than in other sectors. A push towards incentivising public transport could help to negate this image and could be encouraged by relatively simple measures such as better information availability and tourist oriented communication strategies. Interest in electric vehicles and scooters also provides opportunities for improvements in reductions in tourist emissions.

70% of tourists surveyed were visiting for a leisure/holiday experience. Generally, this indicates that tourists are time poor and therefore implementing practices that are inconvenient or time consuming will have poor uptake by tourists, which may help explain the low bike usage (mean=1.71). There is therefore a need to ensure that wherever possible sustainability measures need to be convenient with respect to access along with clear information regarding such practices. A focus on implementing sustainable practices that allow visitors to save time might be an option to encourage more sustainable behaviour.

One of the eight goals for the industry is that tourism businesses are actively engaged with their visitors to ensure that the visitor experience is enhanced and adverse impacts are reduced. The report shows that from the perspective of visitors to the Canterbury region, uptake of certain environmental practices (e.g., encouragement of clean and rubbish free spaces) are excellent across all sectors but the accommodation sector outperforms the others on recycling and waste management initiatives. All sectors are perceived as not doing enough in terms of crowd management and carbon offsetting.

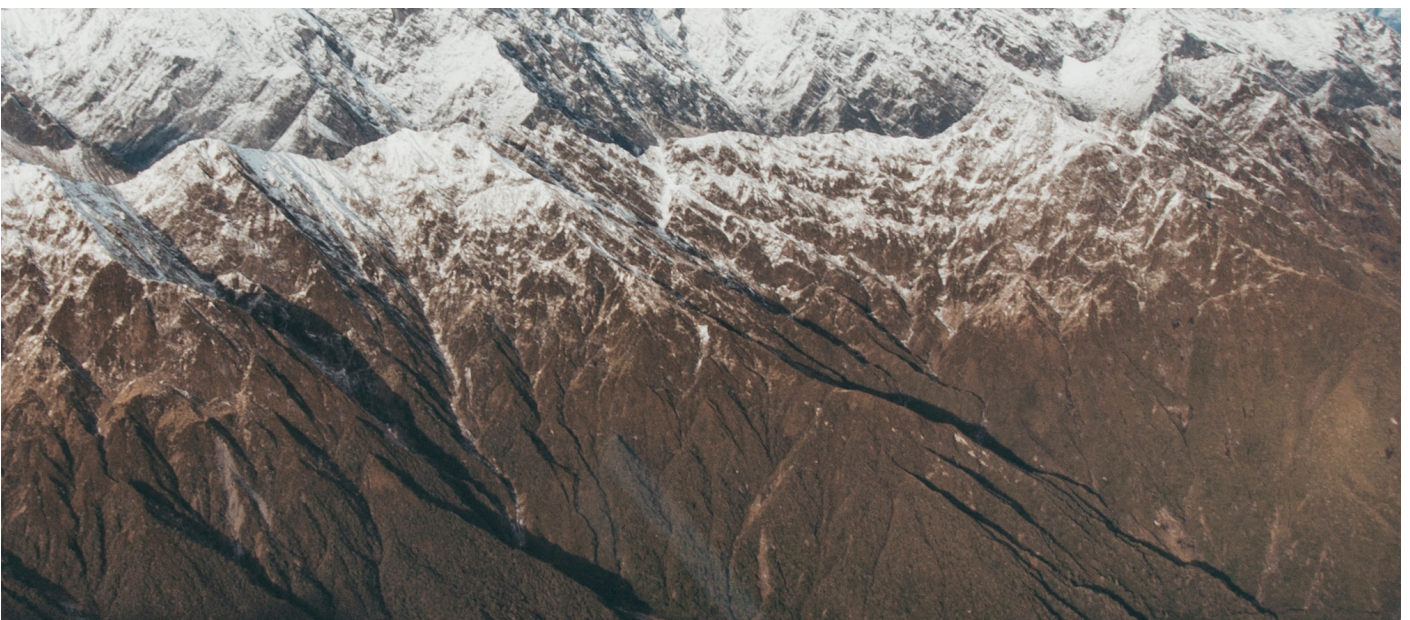
From the findings, the transport sector is perceived as having the lowest uptake of environmental practices. Therefore, in terms of the 14 commitments of tourism businesses to improve the industry, this sector will perhaps need the most support to improve or better manage visitors' perceptions of its environmental practices.

In terms of identifying significant gaps between environmental values and practices (i.e. comparing the mean values of the two questions and ranking the mean values from high to low), a number of critical observations can be made:

- Tourists indicate that they feel strongly to protect the environment and nature and that they respect the earth and natural environment. This could potentially explain their uptake of environmental practices such as use of energy saving practices, recycling of plastics, and water saving practices. These are also the practices that tourists are likely to be more familiar with. Most probably, these are the practices that in their mind are associated with an easy way to keep the environment clean. It does not cost the tourist to recycle, use energy sparingly and save water – these are practices already used and implemented in the Canterbury region. However, this also means that understanding of sustainable behaviour as tourists operates within a narrow range of practices. If emissions reduction from tourism as well as other aspects of sustainability are to be improved then the range of practices actively engaged in by tourists need to be expanded.

Recommendations

- Tourists value 1) natural environment, 2) local culture, and 3) wildlife. Because these are important environmental values for them they recycle, use energy sparingly and save water. Tourists perceive that this keeps the environment clean and protects it. These are expected behaviours from tourists but it seems that there is a need to sensitise them about other environmental practices such as waste management, noise pollution, and low-carbon initiatives.
- Furthermore, the results suggest that - environmental/eco-tourists - tourists value peace and quiet based on the value of the mean for the following two questions 1) Too many tourists are harmful to the environment and 2) too many tourists are harmful for my own visitor experience. This reflects the well-established dissonance between values and practices with respect to tourists' environmental behaviours. This situation is likely to have potentially significant long-term implications for the management of visitor attractions and activities as well as national and regional branding as the extent of dissonance is only going to worsen given forecast increases in visitor numbers.
- Given the significance of tourist perceptions for destination, business and product viability it is vital that a better understanding of tourist perceptions and their relationship to empirical indicators of sustainability are systematically assessed and better tracked over time and replace the piecemeal approach that has occurred in the past.
- Significantly, this report demonstrates that there are clear differences between regional and national perceptions for example, which may have implications for destination initiatives and marketing and communication strategies to both industry and tourist. New Zealand and the Canterbury region is perceived as doing well with recycling and waste related practices, including litter free public spaces and toilet availability. These are clearly positives. However, practices that enable emissions reduction and low-carbon forms of tourism, such as greater use of public transport, require further promotion and, potentially, improved contributions from government at all levels to provide infrastructure that enables visitors to engage in sustainable practices in an easier fashion. Most importantly information regarding sustainability practices needs to be better communicated to tourists and industry.
- It must also be noted that the sample comprises visitors that are relatively well-educated and therefore, they may be more sensitized about environmental issues compared to the average visitor to New Zealand.



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