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International Visitors' Perceptions of Sustainability in New Zealand and the Canterbury Region: Insights from UGC and IVS

New Zealand has experienced a

43%

increase in international visitor arrivals in the last five years.

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Executive Summary

This is the first report that analyses words associated with sustainability in User Generated Content (UGC) on New Zealand and the Canterbury region.

This report has two sections. The first section presents the findings of an analysis of UGC from Trip Advisor and Expedia for the year 2013 to 2018 with the aim of identifying trends and patterns in the words that occur most frequently in online reviews on New Zealand and the Canterbury region. The second section presents an analysis of the environmental practice ratings in the IVS from 2014 to 2018.

Of the 716,274 online reviews analysed, few talk about words related to sustainability and sustainable. This confirms international studies suggesting that sustainability is not at the forefront of visitors' thoughts and perceptions when travelling. The words that occurred most often within words related to economic sustainability are 'price', 'job' and 'rent'. In terms of social sustainability, words such as 'local' and 'friendly' have the most frequent occurrence in reviews. However, it must be pointed out that similar to a word such as 'price',

of which some online reviews talk positively and others negatively, the same pattern can be observed for a word such a 'friendly'. In terms of environmental sustainability, words such as 'conservation', 'litter' and 'traffic' tend to appear the most often in online reviews. Very few differences exist on the words that are associated with all three facets of sustainability (economic, socio-cultural and environmental) when comparing the reviews of international to domestic visitors. As with any UGC analysis, the findings should be treated as only exploratory given the self-selected audience of visitors that write online reviews.

The International Visitor Survey (IVS) data analysis shows that environmental practice ratings (EPRs) 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

positive perceptions. Visitors staying longer than three months have the worst perceptions of all EPRs. Younger visitors have better perceptions of all EPRs. Perceptions of EPRs improve significantly with higher levels of satisfaction.

On the basis of the UGC analysis, the two main recommendations are:

- Similar to the current bio-security information dissemination campaign through advertising to New Zealanders and using Air New Zealand in-flight entertainment system, a sustainability awareness campaign to educate tourists, both international and domestic, seem to be critical for raising awareness about sustainability. This could be combined with the Tiaki Promise. Campaign.

- Raising awareness of Māori history, culture and artefacts can create better perceptions of socio-cultural sustainability.

On the basis of IVS data analysis, the two main recommendations are:

- Without a clear strategy for understanding and managing sustainability practices of visitors, deficit in perceptions of environmental practices may be difficult to correct for the German market and other European markets.

- Marketing campaigns toward older visitors should include more information on environmental aspects of their trip. Younger tourists should be encouraged to spread online word of mouth about aspects of their trip to New Zealand that they found to be particularly sustainable.

Introduction

The continued growth in tourist numbers, with a 43 percent increase in international visitor arrivals to New Zealand in the last five years (Statistics New Zealand, 2018), brings both benefits and challenges to our economy.

The Aotearoa New Zealand Government Tourism Strategy emphasises tourism growth that is productive, sustainable and inclusive. At the heart of sustainability concerns for the industry is the *Tourism 2025 framework* that emphasises sustainable tourism in New Zealand must focus on growing value faster than growing volume. While the New Zealand Tourism Sustainability Commitment is designed to encourage uptake of sustainable practices among tourism businesses, how do we encourage more sustainable behaviour from international visitors to our shore? What are the sustainability issues that matter to these visitors? How do they perceive the overall sustainability of the destination? These questions remain unanswered and should be at the forefront of sustainability thinking in the tourism industry.

As an industry, our commitment to the Tiaki Promise and the set of guiding principles that it provides for visitors can only be effective if we understand what sustainability concerns matter to international visitors.

This report, based on an analysis of user generated content (UGC) from 2013 to 2018 and International Visitor Survey (IVS) data from 2014 to 2018, outlines perceptions and main concerns of international visitors on sustainability. The first part of the report provides findings from an analysis of UGC that are related to key words that are usually associated with the concept of sustainability. Within this analysis, comparisons are made between international visitors to the Canterbury region and New Zealand as well as between reviews from domestic and international visitors.

The second part of the report provides an analysis of IVS data with a focus on international visitors' ratings of the sustainability questions from 2014 to 2018. By analysing these questions, it is possible to identify the socio-demographics of visitors that have the most and the least concern for sustainability.

Method

The data underlying this report were gathered as follows.

UGC were web-crawled from Expedia and Trip Advisor for the period January 2013 to November 2018. Key words (see Table 1) generally associated with the three facets of sustainability (economic, social and environmental) that inform positive and negative perceptions of tourism impacts were searched for in UGC. For international visitors, a total of **67,181** UGC from the Canterbury region were analysed in comparison to **436,482** from New Zealand between 2013 and 2018. A total of **24,356** UGC were analysed for domestic visitors to the Canterbury region in comparison to **188,255** for New Zealand. In total, **716,274** unique reviews were analysed. It is important to point out that online reviews are based on a self-selected audience and not all visitors to New Zealand. Hence, the findings reported are only exploratory.

Data Analysis Method for UGC

A term co-occurrence analysis was run on a data set of 716,274 unique reviews of attractions and hotels in New Zealand. Co-occurrence analysis is a common data exploration tool built on the assumption that words and phrases that have strong statistical relationships of co-occurrence in a large document collection are, in fact, semantically related (Lin, 1998).

By examining what other words are similar to a target word, we can better understand the meaning of the term from the perspective of the people who wrote the online review (Bullinaria & Levy, 2007). The purpose of the analysis was to identify other terms that have a significant likelihood of being in the same review along with a set of pre-defined sustainability-related terms. *An orange line between two words in a circle, indicates that those two words are seen together more than half of the time in online reviews.*

The sustainability terms were selected as representative of economic, environmental, and socio-cultural sustainability concepts. Reviews of places were organised into within Canterbury and outside of Canterbury groups, and the analyses were run on both groups. The datasets were then further divided by whether the review author's home was in New Zealand (**domestic**) or outside of New Zealand (**international**). The analyses were then run on each of these four sub-groups as well. Once we generated a matrix of word similarities for each of these cases, we extracted the most similar words for our sustainability terms and created a graph-based visualisation. These graphs help provide an aggregate view on how the sustainability terms are being written about in large numbers of reviews.

| Search for words such as "sustainable", "sustainability" in UGC comments |
|---|
| **Environmental Sustainability**

Key words: conserve, recycle, reuse, repurpose, environment, concern, 100% pure, pollution, traffic congestion, poor infrastructure, litter, well-being, quality of life, wildlife disturbance, waste, waste disposal, climate change, emissions |
| **Socio-Cultural Sustainability**

Key words: Māori tourism, local people, community involvement, talk with locals, interact with locals, preserving culture, local customs, heritage sites conservation or preservation, local crafts, friendly locals, delinquent behaviour, alcoholism, crime, rowdy behaviour, unfriendly people, homeless, dirty place |
| **Economic Sustainability**

Key words: create job, job creation, positive impact on communities, high prices, value for money, rents and rates going up, inflation, low wage |

Table 1: Keywords used to Search Sustainability
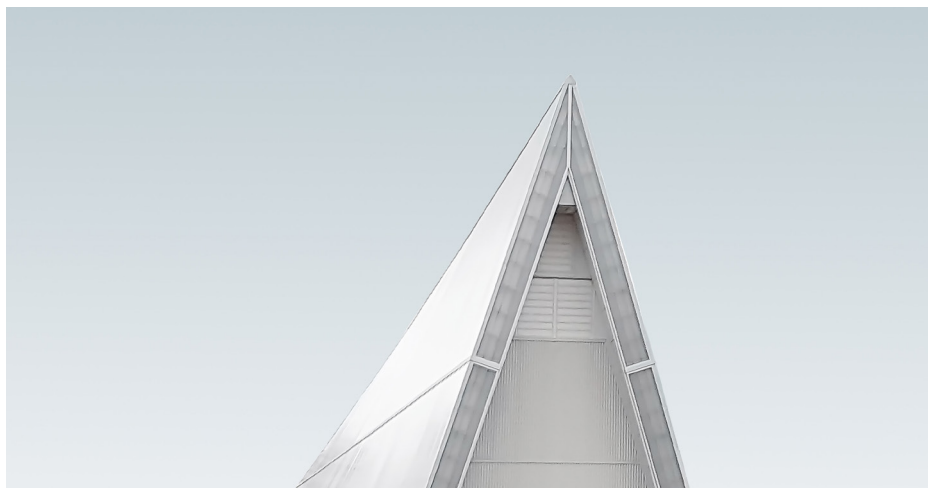
Method

Data Analysis Method for IVS

Environmental practice ratings were introduced to the IVS from 2013 however, we used the data from 2014 onwards as this was the first year of complete coverage. The analysis reported in this document thus covers a five-year period with the 2018 data being incomplete. Frequencies and descriptive statistics are used initially to give an overall insight into the trends that can be identified from the data. Then, using the respective environmental practice ratings (EPR) reported in IVS data, OLS regression models are estimated to identify relationships between the variables reported in Table 2.

Dependent Variable	
Environmental Practice Ratings (EPR) – Measured [1= Amongst the best in the world; 2=Ahead of most other places; 3= About average; 4=Behind most other places; 5=Amongst the worst in the world]	
Independent Variables	
Overall satisfaction with trip	Measured in the IVS on scale 1–10
Country of origin	39 main countries considered in the analysis—remaining countries coded as 'other'
Main accommodation types used while in New Zealand	
Travel type	Independent vs. tour/package
Purpose of visit	Holiday, Business, Education etc.
Gender	Male/female
Age group	Five groups :18–24, 25–34, 35–49, 50–64, 65 and above
Traveller type	Solo vs. travel in groups
Year (2014–2018)	to absorb time dependent variance
Percent of time spent in Canterbury region	to give the results a focus on the Canterbury region—marginal effects are reported
Weighted spend by tourists	Weighted spend by individual tourist. Represents the total spend
Interaction effect	Interaction of year/percent of time spent in Canterbury

Table 2: Variables Analysed from the IVS Data
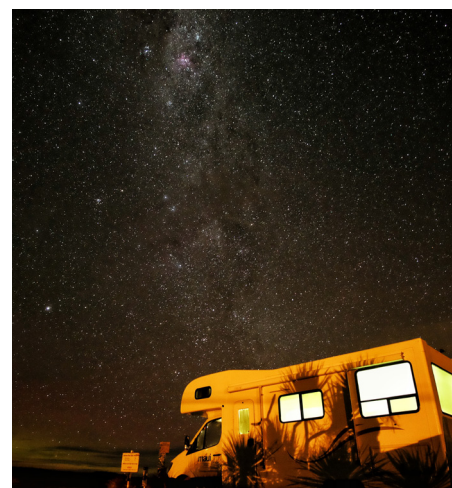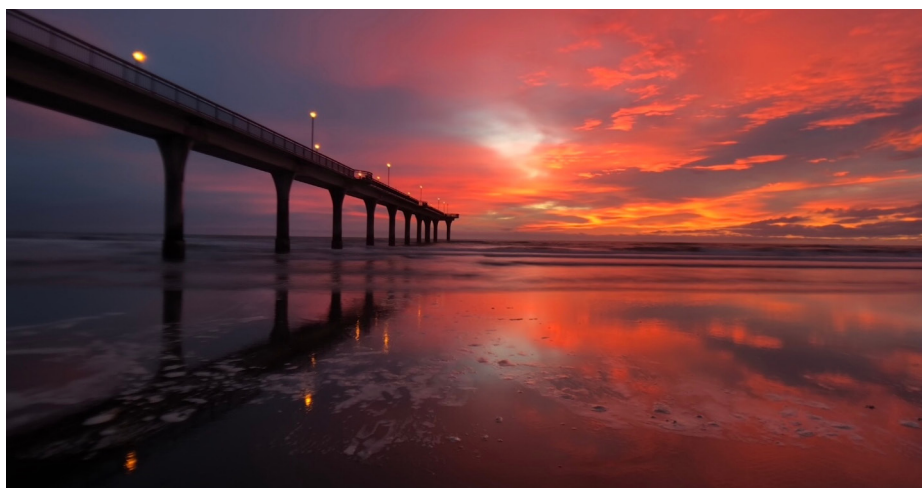
Sustainability Perceptions

International Visitors Perceptions of Sustainability—Insights from International Studies

Although sustainability and sustainable tourism in particular is a major theme in international tourism research there is surprisingly little specific research on international visitors' perceptions of sustainability (Sánchez-Fernández, Iniesta-Bonillo & Cervera-Taulet, 2018). Furthermore, much of the research is highly fragmented (Sidali, Huber & Schamel, 2017), and occurs at different scales, with different attributes, and on different aspects of the destination and tourism product (Lee, 2005; see Hall et al., 2015 for reviews of the sustainable tourism literature). For example, many studies of tourism and sustainability do not focus solely on international visitors, while many look at attitudes and behaviours rather than perceptions. An additional issue to observe in the methodology adopted for perceptual studies is the method used to intercept (potential) visitors for any survey and the purpose for which the survey is being used. For example, if the survey is undertaken before visitation as a part of a general perception study for a national tourism marketing strategy so as to infer the role of national destination perceptions in influencing marketing planning and tactics, sustainability is usually only a component of a wider set of images and perceptions that may be investigated.

When perception research is undertaken at a regional or urban destination level, or when looking at attractions or particular product categories, e.g. accommodation, most perception research is taken at site and is often combined with questions as to the degree of congruence between visitor perceptions and the extent to which expectations are met as the result of the visitor experience. In addition, many of these studies look at international and domestic visitor perceptions combined, or those of the local community, rather than international tourists alone. Nevertheless, some studies examine perceptions of sustainability in other destinations. For example, Cottrell et al. (2004) examine tourist perceptions of sustainability in Manuel Antonio/Quepos, Costa Rica and Texel, The Netherlands. In another study, Cottrell et al. (2013) examine resident satisfaction with sustainable tourism in the Frankenwald Nature Park, Germany. Lee (2013) investigates the support of community residents for sustainable tourism development of the Cigu wetland in southwest Taiwan while Mathew and Sreejesh (2017) investigate the perceived quality of life in three international tourism destinations in the state of Kerala, India (Kovalam, Kumarakom and Thekkady). Stefánsson et al. (2017) examine the perceived effects of electric transmission lines on tourism in Iceland and Iniesta-Bonillo et al. (2016) examine the relationships between visitors' perceived sustainability of a tourist destination and their perceived value of and satisfaction with the trip in two tourist destinations (Cullera, Spain, and Oristano, Italy). Collectively, these studies all point to the potential application of perceptual research to tourism sustainability.

In the general marketing literature, sustainability is recognised as a potentially important factor in building customer brand equity for some markets (Kim et al., 2015). However, while this general principle is hoped by tourism stakeholders to apply in a destination and

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tourism product context, and is often promoted as such by those seeking to encourage more sustainable forms of tourism, empirical evidence to validate such a position is lacking and realistically only operates in a limited number of market segments for most tourism products.

One of the difficulties in assessing studies of sustainability is that the concept is used in an inconsistent manner (Hall et al., 2015). Following its emergence in the mid-1980s and the way it tends to be framed by international organisations such as the UNWTO as well as policy makers in many countries, sustainability is usually conceived of as a multidimensional construct made up of economic, socio-cultural, and environmental dimensions. Such an approach reflects notions, such as those promoted by the UNWTO as sustainability consisting of "three pillars" or of ideas from corporate sustainability on a "triple bottom line" (Hall et al., 2015). However, the reality is that the operationalisation of sustainability

means that different destinations and tourism businesses give the concept different emphasis meaning that there is great inconsistency with respect to how the concept is actually applied. The notion of sustainability and sustainable tourism is also often used interchangeably with terms such as responsible tourism, alternative tourism, green tourism, CSR, ecotourism, soft tourism, and inclusive tourism – among others (Hall et al., 2015; Hall et al., 2016). Such a situation also means there are a wide variety of factors that a study must consider when research is undertaken on sustainability with different emphases and indicators. This means that, for example, survey items are not replicated and that different surveys may use significantly different wording to examine similar concepts. While such an approach does not mean that different studies focus on specific issues so that they are more relevant to some destinations or products than others, but rather it means that it is very hard to accurately benchmark destination,

business and product sustainability.

In addition, because of a lack of replication and the conduct of 'one-shot' studies, i.e. surveys that are only undertaken at one point in time, there is a widespread failure to ascertain how tourist perceptions of a destination with respect to sustainability change over time as such questions are usually not included in international visitor surveys for example. With one of the few exceptions to such a position being the inclusion of questions with respect to various aspects of sustainability in the international visitor surveys now being conducted by the Icelandic Tourism Board (ITB) (who also monitor the perceptions of Icelanders with respect to tourism). Indeed, the ITB approach highlights that the questions that are given to international visitors with respect to their perceptions of sustainability can differ from those given to residents, further complicating understanding of perceptions of how sustainable tourism is.

Source	UNEP & WTO (2005)	UNEP & WTO (2005)	ETE & UNESCO-BRESCE (2009)
Comments	Policy areas that have implications for a sustainable tourism agenda	The most common issues in tourism destinations, selected from the WTO Guidebook on Indicators of Sustainable Development for Tourism Destinations.	Criteria for sustainable tourism
Issues/ Indicators/ Criteria	• Economic viability • Local prosperity • Employment quality • Social equity • Visitor fulfilment • Local control • Community wellbeing • Cultural richness • Physical integrity • Biological diversity • Resource efficiency • Environmental purity	• Local satisfaction with tourism • Effects of tourism on communities • Sustaining tourist satisfaction • Tourism seasonality • Economic benefits of tourism • Energy management • Water availability and consumption • Drinking water quality • Sewage treatment (wastewater management) • Solid waste management (garbage) • Development control • Controlling use intensity	1. Income and revenues 2. Employment 3. Strengthening of the local economy and long term economic viability 4. Improvement of living conditions 5. Participation in decision-making and local control 6. Satisfaction with tourism 7. Strengthening of social and cultural patterns 8. Sustainable use of natural and cultural resources 9. Protection of natural heritage 10. Protection of cultural heritage 11. Enhancement of environmental awareness 12. Quality of services and experience 13. Tourists' satisfaction 14. Tourism product quality and economic viability 15. Communication of sustainability towards the tourists 16. Cultural Exchange as a driving force for peace 17. Management and monitoring planning 18. Carrying capacity

Table 3: Categories of Sustainable Tourism Issues Recommended for Monitoring or Part of Perception Studies

Sustainability Perceptions

To illustrate these points Table 3 provides comparisons between different suggested ways of assessing how sustainable tourism is as well as actual studies of perceptions of tourism sustainability.

Studies of the perceptions of international tourists are therefore limited with respect to their being the sole focus of research on sustainability in the international literature. Instead, perceptual research has tended to focus more on the perceptions of visitors at an attraction, location or in relation to specific products, such as lodging or on resident/community perceptions. Instead, rather than comprehensive studies of international visitor perceptions, issues of sustainability tend to be noted either in relation to perceptions of very specific items or issues the exact questions around which are usually not replicated in other studies or over time, e.g. Priskin (2003) and Prayag and Brittnacher (2014) on coastal area degradation; Esparon et al. (2014) on visitors' perceptions of the importance of ECO certification's attributes for dive companies in the Great Barrier Reef; or Breen and Breen (2008) on crowding in reef environments, and Jin and Pearce (2011 on crowding in tourist sites in China.

Source	ETE & UNESCO-BRESCE (2009)	GSTC (2018)	
Comments	Criteria for sustainable tourism (clustered)	Global Sustainable Council Tourism Criteria for Destinations (GSTC-D) (2013)	
Issues/ Indicators/ Criteria	**Cluster 1: Communities' well being** 1. Income and revenues 2. Employment 3. Strengthening of the local economy and long term economic viability 4. Improvement of living conditions 5. Participation in decision-making and local control 6. Satisfaction with tourism 7. Strengthening of social and cultural patterns **Cluster 2: Natural and cultural environment** 8. Sustainable use of natural and cultural resources 9. Protection of natural heritage 10. Protection of cultural heritage 11. Enhancement of environmental awareness **Cluster 3: Tourism product quality and tourists' satisfaction** 12. Quality of services and experience 13. Tourists' satisfaction 14. Tourism product quality and economic viability 15. Communication of sustainability towards the tourists 16. Cultural Exchange as a driving force for peace **Cluster 4: Management and monitoring** 17. Management and monitoring planning 18. Carrying capacity	**SECTION A: Demonstrate sustainable destination management** A1 Sustainable destination strategy issues, developed with public participation. A2 Destination management organization A3 Monitoring A4 Tourism seasonality A5 Climate change adaptation A6 Inventory of tourism assets & attractions A7 Planning Regulations A8 Access for all A9 Property acquisitions A10 Visitor satisfaction A11 Sustainability standards A12 Safety & security A13 Crisis & emergency management A14 Promotion (accuracy) **SECTION B: Maximise economic benefits to the host community & minimise negative impacts** B1 Economic monitoring B2 Local career opportunities B3 Public participation B4 Local community opinion B6 Tourism awareness & education B7 Preventing exploitation B8 Support for community B9 Supporting local entrepreneurs & fair trade	**SECTION C: Maximise benefits to communities, visitors, and culture; minimise negative impacts** C1 Attraction protection C2 Visitor management C3 Visitor behaviour C4 Cultural heritage protection C5 Site interpretation C6 Intellectual property **SECTION D: Maximise benefits to the environment and minimise negative impacts** D1 Environmental risks D2 Protection of sensitive environments D3 Wildlife protection D4 Greenhouse gas emissions D5 Energy conservation D6 Water management D7 Water security D8 Water quality D9 Wastewater D10 Solid waste reduction D11 Light & noise pollution D12 Low-impact transportation

Table 3 (cont.): Categories of Sustainable Tourism Issues Recommended for Monitoring or Part of Perception Studies

Sustainability Perceptions

Source	Cottrell et al. (2004)	Sidali et al. (2017)	Sánchez-Fernández (2018)
Comments	Aspects of sustainability items	Examine perceptions of sustainability among tourists using a best–worst scaling method	Items used to ascertain perceived sustainability
Issues/ Indicators/ Criteria	**Ecological dimensions** • Pollution of environment, water and air • Disturbance of the plants and animals • Pollution of sea water • Exhaustion of the water and energy • Protective measures for plants and animals not good • Destruction of beach through tourism • Loss of rare plants and animals **Cultural dimensions** • Loss of local lifestyles and traditional habits • Too many buildings at the cost of green space • Too many tourists in the nature resorts • Too many tourists around the beaches • Infrastructure locally is improved because of tourism • I feel safe in the area • Unfriendly and inhospitable locals towards tourists **Economic dimensions** • Prices too high for amenities and products because of tourists • Foreign investors have too much influence on the local economy • Local people have the lowest paid jobs • Entrance fees to National Park too high • Offer of local products for tourists to buy is good • Work opportunities for women in tourism is equal to men	1. To experience nature in an intense and profound way. 2. To care about the origin and sustainability of food and other products bought during the holiday. 3. To grapple with the culture of the host country and to adapt oneself to new environments. 4. To choose a sustainable and eco-friendly accommodation. 5. To use public transportation or other means that do not harm the environment.	• I have observed that the municipal area is investing to attract tourists • I consider that the municipal area has a good supply of handcrafts from the area • I consider that there is a good relationship between quality/price of tourist services inthe destination • I think that the economic benefits of tourism in the municipal area are greater than the economic costs of tourism. • I think the heritage resources (monuments. etc.) in the municipal area are valued • I think the cultural resources (festivities. traditions etc.) in the municipal area are valued • I think that they are conserving local culture, cultural and heritage resources, and authenticity due to tourist activity • I have seen there is a campaign to encourage the conservation and responsible consumption of water • I think the level of pollution in the municipal area is acceptable • I think odours in the municipal area is acceptable • I think the cleanliness of the city and the main sights I have visited is good • I think noise in the municipal area is acceptable even with the influx of tourists • I think crowds are acceptable even at the height of the tourist season • I think the authorities promote energy savings and efficiency

Table 3 (cont.): Categories of Sustainable Tourism Issues Recommended for Monitoring or Part of Perception Studies

Sustainability Perceptions

International Visitors Perceptions of Sustainability—Insights from International Studies

Studies of international visitors' perceptions of sustainability in New Zealand reflect the same issues as the international literature with perception specific literature, as opposed to studies that examine for example attitudes, motivations and behaviours, being very limited. Previous research in New Zealand that deals specifically with international visitor perceptions includes Higham's (1998) research on tourist perception of wilderness. Although not directly on sustainability, some of the issues in Ryan and Aicken's (2010) study of visitors' and residents' perceptions of place from Waiheke Island are relevant to understanding some of the issues surrounding destination sustainability. As with the international literature much of the New Zealand literature that deals with visitor perceptions tends to amalgamate international and domestic tourists in the same study. For example, Cessford (2000) on noise on the Great Walks; Sutton (1998) on visitor perceptions of aircraft activity and crowding at Franz Josef and Fox Glaciers. Additionally, there is research that examines both visitor and resident perceptions, e.g. Fairweather and Swaffield (2002) who looked at visitors' and locals' experiences of landscape in Rotorua.

The relative lack of direct research on tourist perceptions in New Zealand in relation to sustainability may seem a little surprising. However, although there is research on international tourist behaviour, activities and attitudes, and qualitative work on issues of "clean and green" brand image few studies actually directly examine international tourist perceptions with respect to sustainability.

Findings Index

User Generated Content

International Visitors Survey

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Findings from UGC Analysis on Sustainability

Two key words (sustainability and sustainable) were initially used to search the 716,274 unique reviews. The word sustainability yielded only 7 and 57 unique reviews from the Canterbury region and New Zealand respectively from international visitors. Figure 1 shows associations of words with sustainability from all sources, including domestic and international visitors. In the left quadrant (reviews for all of New Zealand), words such as 'recycle', 'waste', 'conscious', and 'eco' appears to be related to sustainability in the context of accommodation providers. The following review gives an example of why the words are clustered together:

"I've stayed here both for work and as a family holiday with 3 boys. The staff can't do enough to help and make you feel at home. The building are stunningly beautiful and the Homestead building feels like home from home. My kids just wanted to hang out and explore all the **sustainability** *features. The use of high tech compost toilet and wetland for treating wastewater was a fantastic way to teach my kids the importance of water conservation and the water cycle. The "Solar Garden" a great way to learn about energy. I totally recommend this place for family and corporate stay."*

In the same quadrant, words such as 'native', 'wildlife', 'conservation', 'observe', 'environmental', and 'animal' form a second cluster of words related mainly to attractions in New Zealand. The following review illustrates the clustered words:

"Wellington Zoo offers a great day out for the family. A comparatively small zoo it is beautifully presented and has a wide variety of animal in a natural setting. Heavily focused on conservation and **sustainability** *the zoo is making numerous improvements and adding further exhibits. There are frequent shows (virtually every half hour), and it's crucial to be there at start time as they typically run for only 5-10 mins. A real highlight was 'The Nest' which is an operational hospital that allows visitors to observe (through large glass windows) regular medical treatment of animal. The kids loved it! With a goal of "building the best little zoo in the world" this Wellington highlight is well on its way to achieving their mission. Highly recommended."*

The third cluster, which includes words such as 'guest', 'stay', 'breakfast' and 'night' again pertain to accommodation providers.

In the right quadrant words such as 'recycle', 'eco' and 'compost' are associated with the word sustainability in reviews from the Canterbury region. Again these words are clustered based on comments of visitors on accommodation providers mainly as shown in the review below.

"The setting of this lodge is awesome - the views are breathtaking you are situated in the mountains over looking the lake and more mountains! I can only imagine how beautiful and what an atmosphere this very homely lodge must have in winter ski season. All staff are friendly and helpful, there are several public lounge areas to relax in as well as a spacious bar and restaurant - all with outstanding views. The food and menu was excellent - with ingredients all sourced locally. This hotel is hands on with **sustainability** *and eco friendly. We're staying in the newish wing and the room were surprisingly modern and well decorated, they were spacious, comfortable and clean with every necessary amenity. I love the special little attention to detail decor touches all around the clearly owner run lodge. You could comfortably spend several days at this resort."*

From Figure 1, it is clear that there are some differences in associations of words with 'sustainability' between domestic and international visitors. Domestic visitors have a strong focus on one specific example, such as the Hamilton gardens (second quadrant left), and sustainability related to accommodation offers. International visitors seem to be less critical of sustainability of accommodation offers (third quadrant left)

A similar search on the word 'sustainable' in the online reviews shows that 113 reviews on New Zealand from international visitors included the word compared to 10 reviews on the Canterbury region. Again from all the reviews on New Zealand, the word 'sustainable' seems to be associated with the Hamilton Gardens and other attractions as shown in Figure 2 (first quadrant on the left). In contrast, for the Canterbury region the word 'sustainable' appears associated with the Cardboard Cathedral (first quadrant on the right) as shown in the review below:

"This is an amazing building which is well worth visiting. It was designed by architect Shigeru Ban and is made using shipping containers and cardboard amongst other **sustainable** *materials. It was opened in 2013 as a Transitional Cathedral after the main Cathedral was badly damaged in the earthquake. It seats around 700 people. There is a superb modern stained west window, furniture made from laminated wood and cardboard. There is also a small shop."*

For the Canterbury region, there is also a cluster of words related to service providers not meeting the expectations of visitors in terms of their behaviour towards visitors, as exemplified by words such as 'owner', 'refusing', 'interrogated', 'withdrew' and 'suspicion'. There are very small differences in words associated with 'sustainable' between international and domestic visitors as shown in the remaining quadrants in Figure 2.
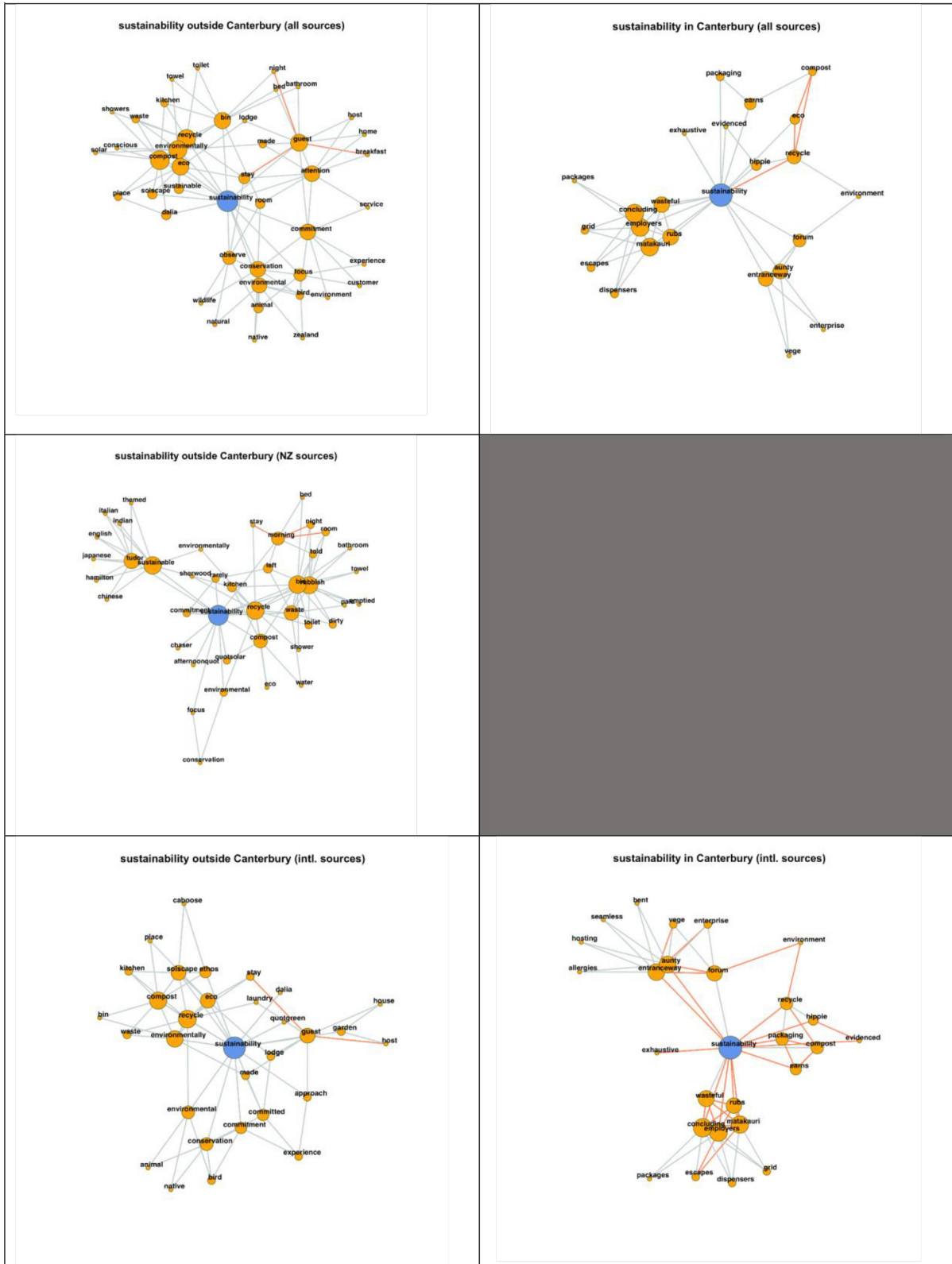
Findings

Figure 1: UGC and 'Sustainability' as a Word
Canterbury, from NZ = 3; Canterbury, from Intl = 7; NZ, from NZ = 23; NZ, from Intl = 57.

Findings

Figure 2: UGC and 'Sustainable' as a Word
Canterbury, from NZ = 3; Canterbury, from Intl = 10; NZ, from NZ = 55; NZ, from Intl = 113.

Findings

Economic Sustainability

In terms of economic sustainability, the results of the analysis of the online reviews that contain the words 'prices', 'job', and 'rent' are reported below as they were the words most used in reviews by visitors out of the list of words provided for the search (see Table 1).

UGC and 'Price' as a Word

The word 'price' appeared in 30,657 (4.28% of all reviews) online reviews on New Zealand from international visitors in comparison to 4,493 (0.63% of all reviews) on the Canterbury region. From online reviews on New Zealand, visitors are talking about prices mainly in relation to their accommodation experience and at times the attractions visited. The same trend appears in the data from the online reviews on the Canterbury region as shown in Figure 3. In online reviews on both New Zealand and the Canterbury region 'price' is associated with words such as 'hotel', 'room', 'night', and 'stay'. Two examples are provided below with the first related to a motel and the second example is for the Sky Tower.

> "We came to New Zealand for a holiday, found this motel conveniently located and close to everything that we needed. The room was spacious, very clean and comfortable. The staff were friendly and happy to help. The **price** was reasonable and we would definitely stay again and recommend to our family and friends."

> "Beautiful views at night time over the city, pity we left it so late as we had just enough time to look out over the 2 levels before closing. Unfortunately when we visited the website it doesn't mention **price** just for viewing the sights, it goes into detail on the sky jump & walking around the outside so we weren't sure until we got there that we could just view the sights. We really enjoyed it."

Both domestic and international visitors seem to associate the word 'price' with the accommodation they stayed at. There is no obvious difference in the association of words between the two groups.

UGC and 'Job' as a Word

The word 'job' was mentioned in 4243 online reviews on New Zealand from international visitors compared to 506 reviews on the Canterbury region. The word 'job' is associated with other words such as 'service', 'hotel', 'staff', and 'stay' in online reviews from New Zealand (first quadrant on the left in Figure 4). It is clear that visitors talk about 'job' in relation to how good the service experience was, as shown in the quote below.

> "Real Journeys does a great **job** with the Doubtful Sound cruise. The drive through the Wilmot Pass is just long enough to see the rainforest scenery. With this cruise, you are the only boat in the sound and get the full scenic effect without all the tours that do the Milford Sound. We would highly recommend it!"

In the first quadrant on the right in Figure 4, it can be seen that similar words are associated with the word 'job' in reviews on the Canterbury region. An example of both a "good" and "bad" job in relation to the service experience can be seen in the online reviews provided below. The second quote can also be interpreted as visitors perceiving the service provider not caring about his or her employment.

> "Very good hotel, we would stay again. Close to the airport. They picked us up at 12.30 am. Room service was limited, the toasted chicken and cheese was delicious. Considering it was very late they did a good **job**"

> "This hotel has the worst service in any hotel in New Zealand, I was very impressed on how bad it is, it seems that staff members don't have any guest services skills whatsoever. We arrived at the hotel after 3pm and our room was not ready, the person at the Front Desk was very rude and she seemed that she did not care at all about her **job**. When we came back and went to the room we've found a queen bed instead of twins, my travel agent asked for twin beds I had the proved for that. I went back to talk to the rude receptionist and she said she was going to ask housekeeping to change that."

From online reviews of both international and domestic visitors, it is clear that the word 'job' is associated with staff helpfulness as shown in the third quadrant of Figure 4.

UGC and 'Rent' as a Word

The word 'rent' was mentioned in 26,683 online reviews on New Zealand from international visitors compared to 3,903 reviews on the Canterbury region. The word 'rent' is associated with words such as 'room', 'night' and 'stay' in both online reviews on New Zealand and the Canterbury region. There are no differences between domestic and international visitors on the words associated with 'rent' as shown in Figure 5. Three examples of online reviews that use the word 'rent' are provided below. Similar to the word 'price', there are both positive and negative experiences of visitors linked to the word 'rent'.

> "We **rent** 3 units, we got nice room, nice view. Slight pricey but nice stay. We arrived after the office hour, had to pick up keys from the other hotel. It was slight hassle since we were late already, unable to find restaurant. The supermarket also closed by the time we headed out to eat."

> "Arrived to our cabin, located next to the wreckage of another, freshly burnt-down cabin. There was no smoke-alarm in our cabin and the heating (it was advertised as 'heated') consisted of a very small and cheap heater fixed to the wall. After our first night we asked to be refunded for the following night half an hour after the stated check-out time and were met with hostility from reception. Despite no refund, we opted not to stay another night. You can **rent** an entire holiday-house in Twizel for the same cost as this motor-home sized cabin; Google it."

> "Absolutely loved this place. The flat we **rent** was situated straight across from the thermal resort. Bit run down but we weren't there to be living luxuriously. My boys enjoy the outdoors and swimming. There is also a pub on site for those who like to unwind and camping. If you're not fussy this place is a great day or night away"
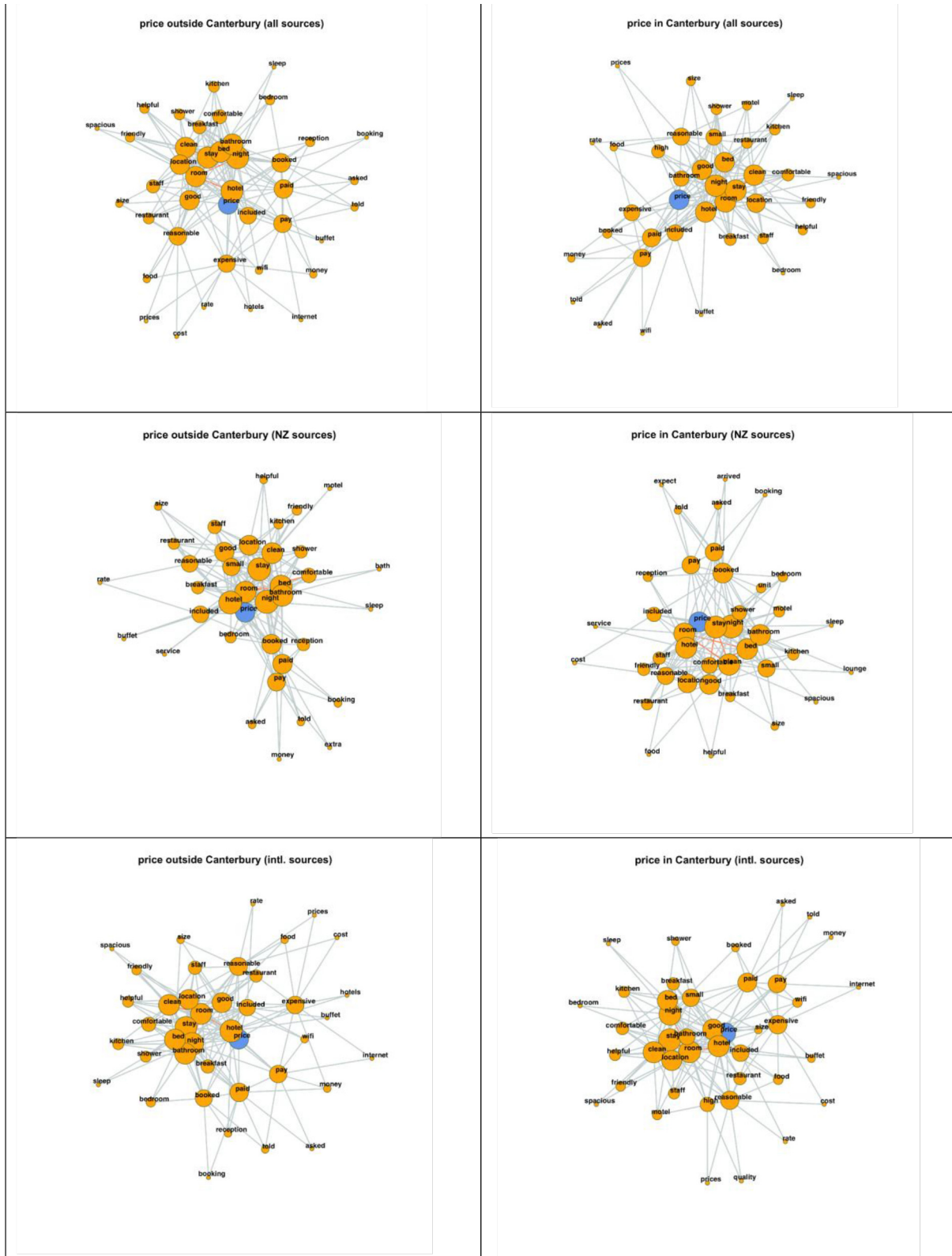
Findings

Figure 3: UGC and 'Price' as a Word
Canterbury, from NZ = 1,695; Canterbury, from Intl = 4,493; NZ, from NZ = 13,079; NZ, from Intl = 30,657.
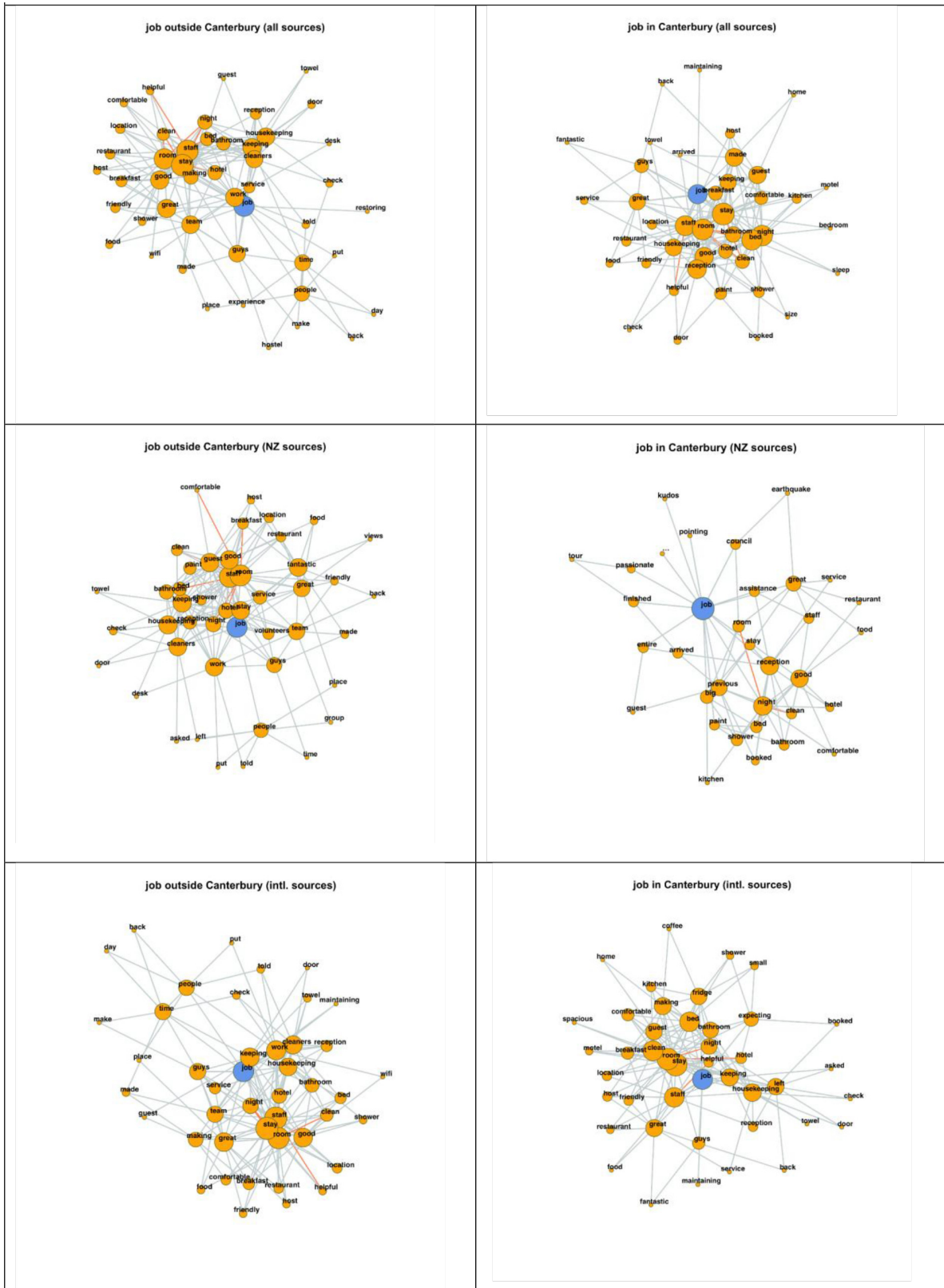
Findings

Figure 4: UGC and 'Job' as a Word
Canterbury, from NZ = 201; Canterbury, from Intl = 506; NZ, from NZ = 1,891; NZ, from Intl = 4,243.
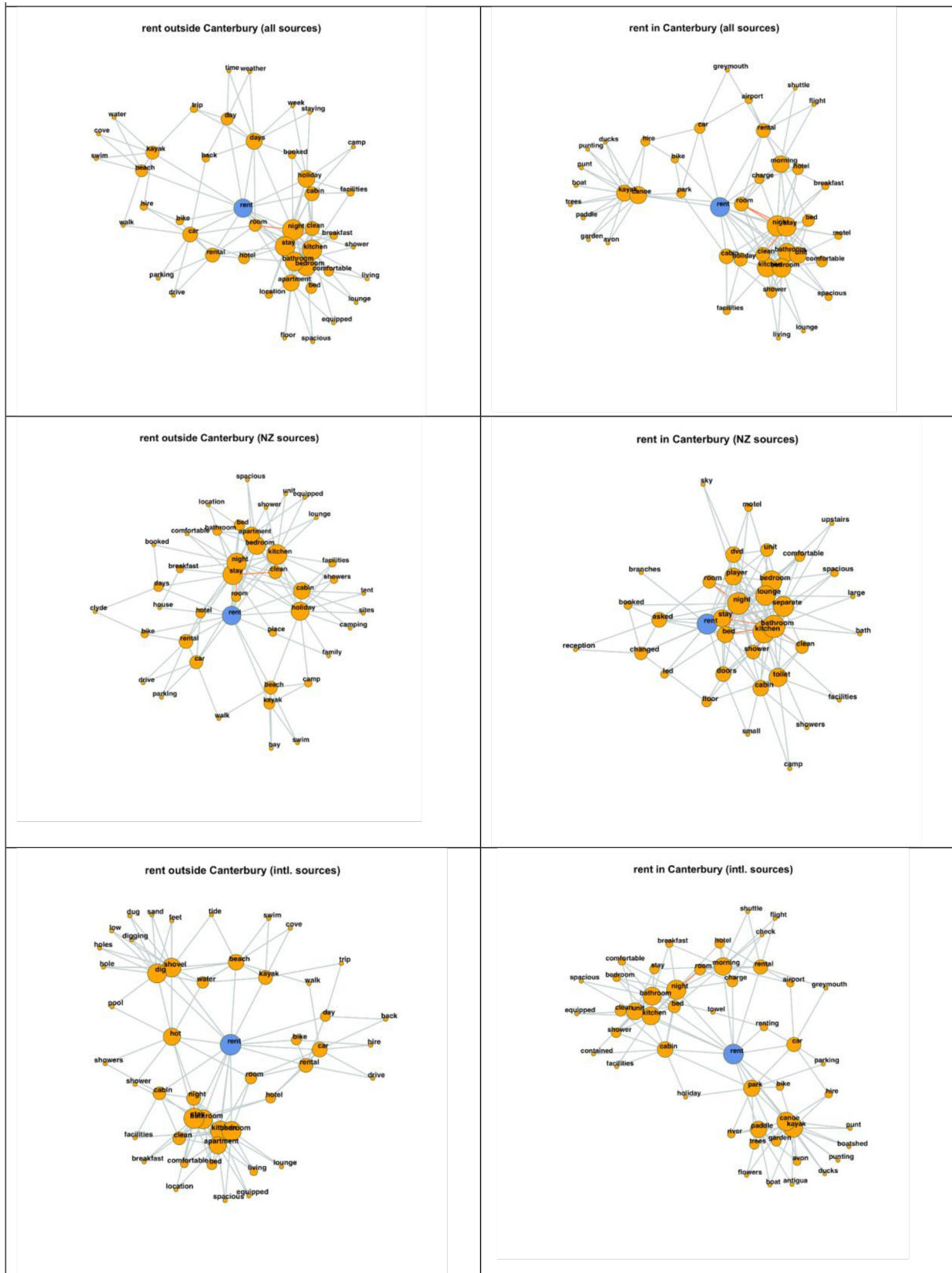
Findings

Figure 5: UGC and 'Rent' as a Word
Canterbury, from NZ = 1,315; Canterbury, from Intl = 3,903; NZ, from NZ = 10,601; NZ, from Intl = 26,683.

Findings

Socio-Cultural Sustainability

In terms of socio-cultural sustainability, the findings below report only those words that had the most common occurrence in online reviews. The six words that had the highest occurrence from the list of words provided in Table 1 were 'community', 'local', 'locals', 'heritage', 'Māori', and 'friendly'. The words 'local' and 'locals' were particularly of interest as the first word generated associations with words related to tourist attractions and accommodation in a geographical sense, i.e. 'local place'. The second word generated associations with words related to perceptions about local people.

UGC and 'Community' as a Word

The word 'community' appeared in 1,113 reviews on New Zealand from international visitors in comparison to 56 reviews on the Canterbury region. Figure 6 (first left quadrant) shows that the word is associated with 'feel' and 'home', indicative of the destination offering a homely atmosphere in reviews on New Zealand. A second cluster of words can be seen with words such as 'history', 'culture', 'Māori', and 'village' highlighting the cultural aspects of the destination. Two examples of online reviews are provided below to illustrate the findings.

> "**Home** for the Holidays. It was very easy for me to **feel** cozy and welcomed at The Palace. Alec was very helpful and friendly, every time I saw him he inquired how I was and how I was liking it. Very accommodating and easy transition when I had to move beds during my stay. Everyone had a chill demeanor and the whole vibe of the place was laid back. I loved getting up early for the breakfast before going on my long walks, and enjoying a sweet in the afternoon graciously provided from a local bakery. Centrally located yet felt isolated and quiet perched on a hill away from the hustle and bustle of the street. I loved the historic buildings and the bohemian interiors.

> I stayed a total of 10 days, and many others find themselves extending their stay here. I was here during Christmas, there was a great potluck feast that made it feel that I wasn't alone for the holiday, such an amazing sense of **community** can be found here. If I ever find myself in Nelson I wouldn't hesitate to stay here again. Thank you!"

> "I love this place! This place is one of my favorite places ever which has a lot to do with the family who owns it. They are amazing people. Very inspiring how much they do for their **community**! Here you'll also get a really good Hāngi a traditional **Māori** way of preparing food. You can learn how to make fried bread or how to weave your own bracelet out of Flax. You can also go ealing [sic] which is really fun! Well worth a visit!!!"

This result is in stark contrast to the words associated with community in reviews on the Canterbury region. In the first right quadrant, the word 'community' is associated with 'room', 'clean', 'breakfast', and 'comfortable' suggesting that accommodation providers play a critical role in embodying the community. A second cluster of words related to the Canterbury Earthquakes can be seen associated with the word 'community'. An example of an online review

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in the context of the Canterbury earthquakes is provided below.

> "The impacts of the **earthquakes** remains evident and is alive throughout Christchurch and the surrounding towns, farms and extended **community**. The memorial is a permanent and fitting place and focus for the trauma and recovery to be engaged with."

The emphasis on words related to culture in all online reviews on New Zealand and the Canterbury earthquakes is linked to the origin of visitors. Domestic visitors tend to talk about accommodation providers as part of the community in online reviews on New Zealand while talking about the Cathedral and earthquake in reviews on the Canterbury region (see second left and right quadrants). International visitors tend to talk about culture in reviews on New Zealand while talking about the earthquake in reviews on the Canterbury region (see third left and right quadrants).

UGC and 'Local' as a Word

The word 'local' appeared in 15,822 (2.21% of all reviews) online reviews on New Zealand by international visitors compared to 2,138 reviews (0.298% of all reviews) on the Canterbury region. In Figure 7, the first left hand quadrant shows that the word is associated with other words such as 'home', 'made', 'host', 'wonderful', 'room', 'stay' and 'knowledge', suggesting that the term 'local' is used to talk about the visitor experience with accommodation providers in reviews on New Zealand. Local is also used to talk about the restaurant experience with words such as 'wine', 'produce', 'market', 'dinner' and 'food', being related. An example of a review is provided below.

> "A lovely little **market** with people selling **local** fresh **produce** and preserves. Interesting range of ready to eat food and cured meats. Loved the dog sitting service provided for a donation, very happy looking animals."

In reviews on the Canterbury region (first right quadrant), the word 'local' is related to accommodation providers with words such as 'room', 'night', 'advice' and 'stay' clustered together. An example of a review is provided below.

> "We **stayed** at Hielan House in late February, as one of the other reviewers did, en route from Fox Glacier to Kaikoura. We also only had one **night** in a crowded itinerary, and found it a very pleasant place to stay with a large bedroom, good bathroom and a sitting area upstairs. We also were invited to have a drink with Shirley and John. We weren't able to use the pool as we didn't arrive until late, although in time to get to the **local** restaurant (there only appeared to be one open on a Saturday **night**!"

In reviews by both domestic visitors on New Zealand and in the Canterbury region (second left and right quadrants), there are clusters of words related to local food, markets and restaurants. There is also a cluster of words with 'history', 'information', and 'Māori' suggesting that the word local is associated with local history as shown in the online review below.

> "Drove past this museum on our way to the beach at Okains Bay. There are plenty of picnic places for lunch. We found one only to have birds looking for food. We took our own food and put rubbish into the bins. We quite happily shooed them away. They need to find native food not something that we throw away. Drive down to Okains Bay was not that interesting. Then to the **local** cemetery for some history. But we spent nearly 2 hours at the Museum. Wow. If you are interested in **Māori history** in the South Island especially Akaroa you will be

amazed Google Murray Thacker."

UGC and 'Locals' as a Word

The word locals appeared in 2995 online reviews on New Zealand by international visitors compared to 419 on the Canterbury region. Similar to the previous word 'local', there is a cluster of words that relates to accommodation providers with the word 'locals' as can be seen in Figure 8 (first left hand quadrant). Words such as 'hotel', 'room', 'stay', 'clean' and 'bed' are also related to the word 'locals' in all reviews on the Canterbury region (first right quadrant). For domestic visitors, the word 'locals' is also related to 'tidy', 'helpful', and 'clean' in all online reviews on New Zealand (second left quadrant). This potentially suggests that domestic visitors do find hotel staff helpful. The same pattern can also be observed in reviews by international visitors on New Zealand and the Canterbury region. An example of a review is provided below

> "The entire city of Queenstown has been amazing. From snow shoe trekking with Pam, Sophie with Dart River experience, Kaz at Coronet Peak, all the staff at the Station helping me book tours, transport with Kiwi Discovery including Grant & Karlyn, the **friendly** staff at Copthorne **hotel** and finally all the **locals** out & about where just so **friendly** &

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helpful - all made me feel like a Queen on my first time to the snow."

UGC and 'Heritage' as a Word

The word 'heritage' appeared in 1262 online reviews on New Zealand by international visitors in comparison to 180 on the Canterbury region. Heritage as an important aspect of the socio-cultural sustainability of a destination seems to be associated as a word in all reviews on New Zealand with one cluster of words related to 'history', 'museum', 'Māori' and 'proud', as shown in Figure 9 (first left quadrant). An online review that illustrates this finding is provided below.

*"We had a great day touring the grounds and learning more about our culture and history. The evening Hāngi ,and challenge and concert will stick in my mind for years I was fortunate enough to be chosen as a "chief" for the **Māori** challenge and it was one of the most emotional nights of my life to accept the challenge and to greet the head man with a hongi I felt a very **proud** and fortunate Kiwi last week and feel that everyone needs to visit and learn more about our culture. Dan and his team of warriors, maidens, performers and restaurant staff did a great job and all New Zealanders should be proud of the good work they do every day to show their culture history and our **heritage** to every visitor to Waitangi and NZ as a whole"*

In the same quadrant there is a cluster of words related to 'hotel', 'breakfast', and 'restaurant', suggestive of the word being used in the context of accommodation providers as well.

In reviews on the Canterbury region, the word 'heritage' is associated in one cluster of words with accommodation providers but in another cluster the word is associated with 'events', 'performance', and 'programs'. An online review that illustrates this finding is provided below.

*"During the recent program of **Heritage events** we enjoyed a Sunday afternoon **performance** by the Choristers in the Cathedral followed by an afternoon tea with scones and sandwiches. Recently returned from a trip to Japan, the Choristers gave an excellent performance of some of their current repertoire. They are an asset to our city. The Cathedral volunteers provided a very enjoyable sit down afternoon tea. Well done!"*

There are subtle differences between in the online reviews by domestic and international visitors on the word heritage. Domestic visitors tend to focus more on the accommodation experience while international visitors tend

to talk also about heritage in terms of history, attractions and culture as well (third quadrant on the left).

UGC and 'Māori' as a Word

Indigenous and local culture is an important aspect of socio-cultural sustainability. The word 'Māori' appeared in 924 online reviews on New Zealand by international visitors compared to only 39 for the Canterbury region. Figure 10 (first left quadrant) shows that the word 'Māori' is associated with words such as 'culture', 'geyser', 'performance', 'hāngi', 'village', 'traditional' and 'haka'. These represent the core experiences associated with Māori culture in New Zealand. An example of an online review is provided below.

*"We stayed in a one-bedroom time share. We had a great sail on the lake on the Barclay (highly recommend). Went to the thermal swimming pools just outside town, which were fantastic. Enjoyed a **traditional Māori** hāngi dinner (in same location as thermal pools) where we enjoyed dinner with 4 Aussies and 26 Iranians. Visited a most picturesque winery just outside of town."*

In contrast, the word 'Māori' is associated with 'history', 'artefact', 'museum', 'exhibit' and 'display' in reviews on the Canterbury region as shown in Figure 10 (first right quadrant). An example of an online review is provided below.

*"A wonderful collection of **Māori** and European **artifacts**. Journey in on the scenic hilltop road to Okains Bay and then journey back in time. Both the buildings and the contents are part of the taonga (treasure), and have been sourced from throughout New Zealand (including the Chatam Islands). Waka (canoes) form an important part of the collection. Most items are well labelled and accessible. Another opportunity to appreciate the hardships and ingenuity of an earlier generation. Well maintained. $10 entry fee for adults well spent."*

There is also a cluster of words in all online reviews on both New Zealand and the Canterbury

region on accommodation providers and the word 'Māori'. There are no noticeable differences between online reviews by international and domestic visitors.

UGC and 'Friendly' as a Word

The word 'friendly' was mentioned in 65,201 online reviews on New Zealand by international visitors in comparison to 10,363 reviews on the Canterbury region. The word 'friendly' is predominantly associated with staff and accommodation providers in all reviews on New Zealand and the Canterbury region as shown in Figure 11. Two examples of online reviews are provided below. It must be noted that 'friendly' can also be associated with the word 'not'. There are no noticeable differences on the words associated with friendly between international and domestic visitors.

*"We recently stayed here and found the rooms large and comfortable. The restaurant was good and **hotel staff** helpful and **friendly**. There are several other restaurants nearby and great beaches a short walk or drive away. I was expecting a balcony off my room, however it did not have one so if you do want one you need to ask. However we did have a great view of the marina and bay from my room."*

*"**Not friendly staff**! We stayed at a luxury villa for one night and had a good experience. The villa unit was very new and everything was working properly. You even had all the kitchen utensils in order to cook or make a BBQ. The **hotel staff** is polite but **not friendly** nor helpful...don't ask them too many questions as they will tell you to go away in a very polite way. I had to visit again this area I would stay at the Whitianga village which is beautiful."*
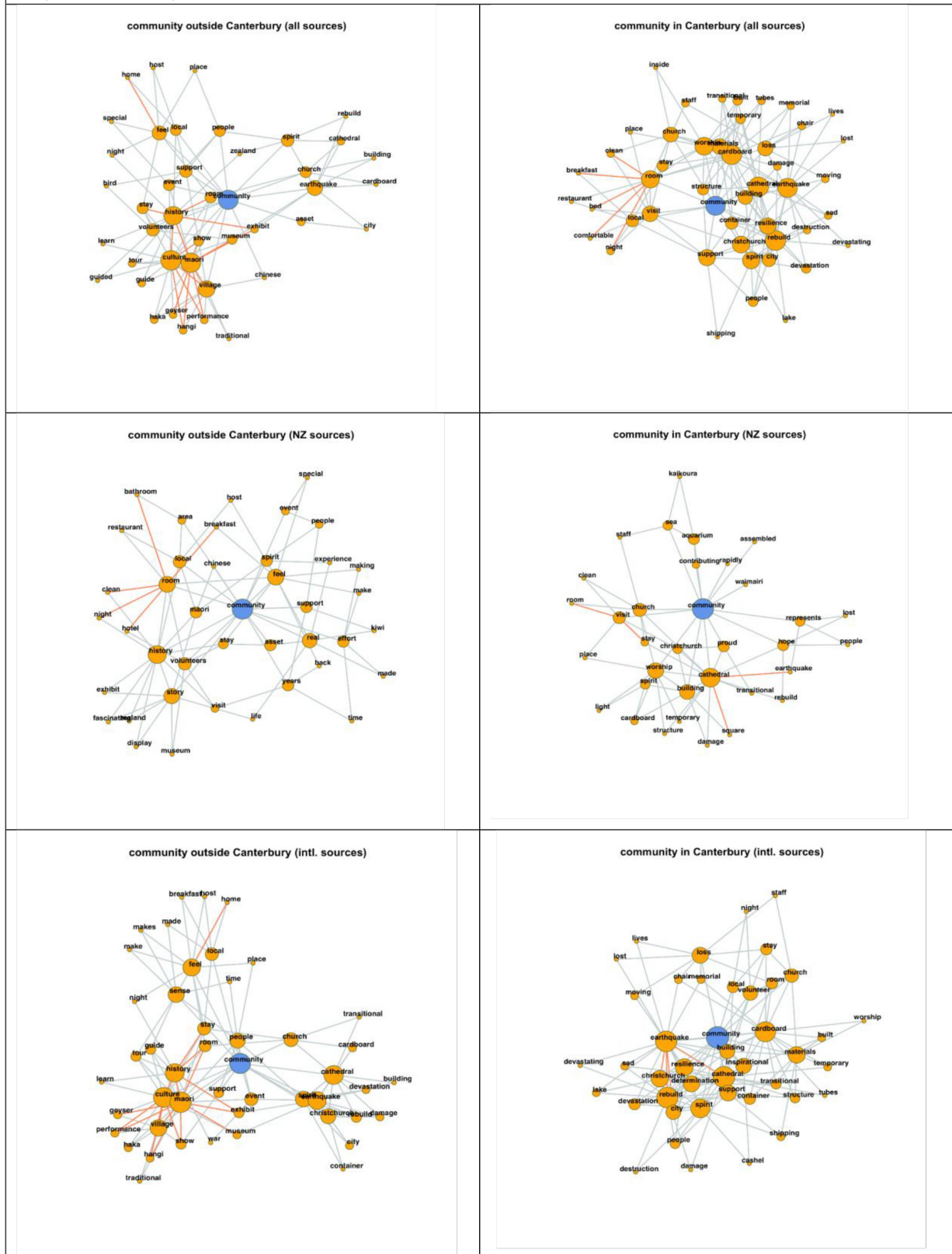
Findings

Figure 6: UGC and 'Community' as a Word
Canterbury, from NZ = 56; Canterbury, from Intl = 248; NZ, from NZ = 462; NZ, from Intl = 1,113.

Findings

Figure 7: UGC and 'Local' as a Word

Canterbury, from NZ = 248; Canterbury, from Intl = 2,138; NZ, from NZ = 5,969; NZ, from Intl = 15,822.

Findings

Figure 8: UGC and 'Locals' as a Word
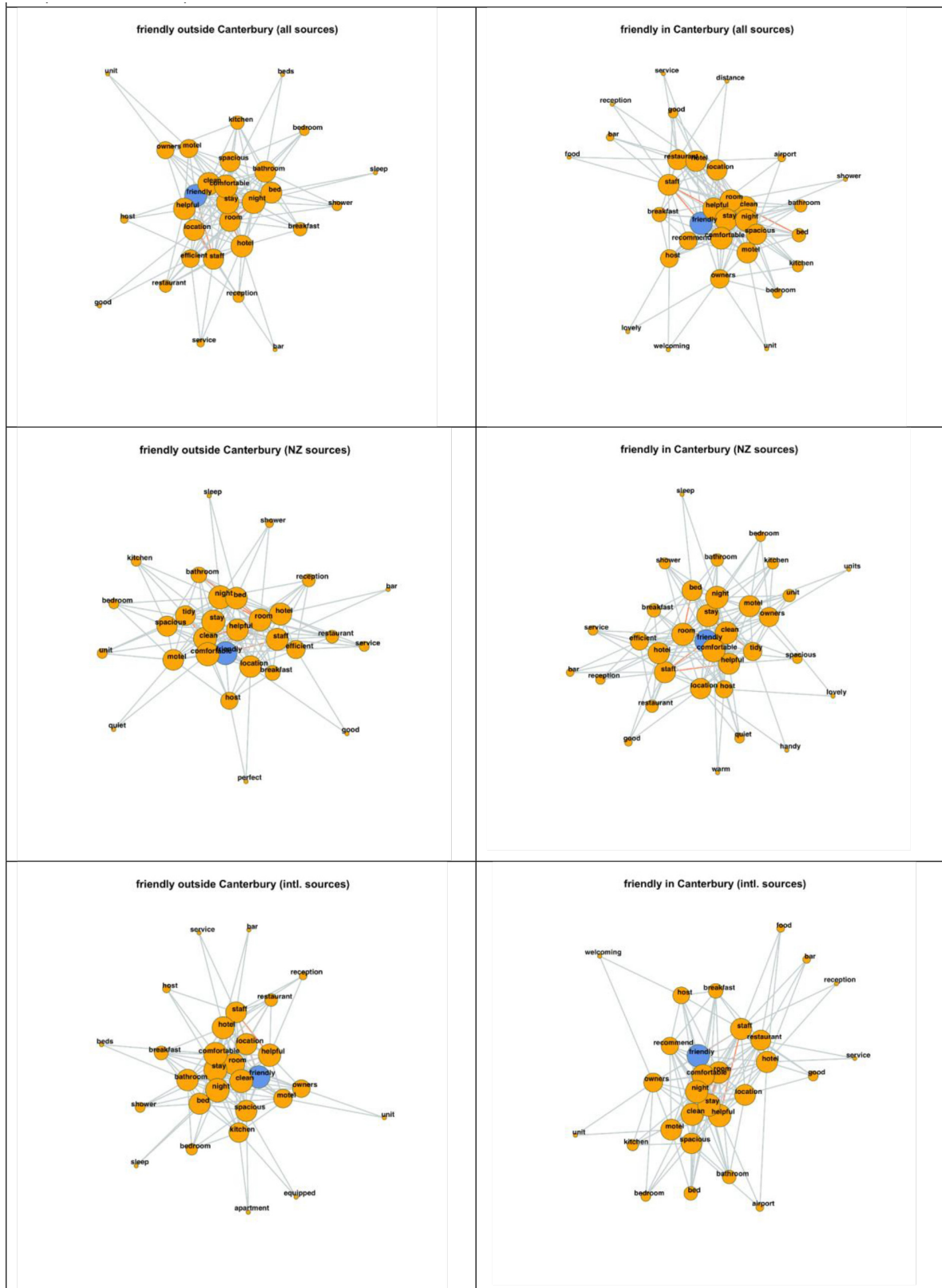*Canterbury, from NZ = 238; Canterbury, from Intl = 419; NZ, from NZ = 1,804; NZ, from Intl = 2,995.*

Findings

Figure 9: UGC and 'Heritage' as a Word
Canterbury, from NZ = 80; Canterbury, from Intl = 180; NZ, from NZ = 498; NZ, from Intl = 1,262.

Findings

Figure 10: UGC and 'Māori' as a Word
Canterbury, from NZ = 17; Canterbury, from Intl = 39; NZ, from NZ = 191; NZ, from Intl = 924.

Findings

Figure 11: UGC and 'Friendly' as a Word
Canterbury, from NZ = 3,872; Canterbury, from Intl = 10,363; NZ, from NZ = 30,601; NZ, from Intl = 65,201.

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Environmental Sustainability

Visitors' perceptions of environmental sustainability were investigated in online reviews through a set of keywords as shown in Table 1. Of these keywords, there are six with the highest occurrence in online reviews including 'environment', 'recycle', 'conservation', 'traffic', 'litter' and 'waste'.

UGC and 'Environment' as a Word

The word 'environment' appeared in 3167 online reviews on New Zealand by international visitors. The word appeared in 456 online reviews on the Canterbury region by international visitors. From Figure 12, it is evident that the word 'environment' is related to wildlife in online reviews on New Zealand. Words such as 'wildlife', 'species', 'animal', 'native', and 'zoo', are the most closely related words (first left quadrant). An example of an online review is provided below.

*"If you'd like to refresh your knowledge about Aotearoa NZ native forests, this is a very cool way of doing it. The trees and other plants are impressive (particularly the several **species** of tree ferns). The labelling is clear and thorough. The emphasis about ecosystems and long-term forest health is very timely: for example, the Kereru is a keystone **species**, as it is the last*

*surviving **species** that broadcasts seeds, for several trees. I particularly liked the photo of the part of the Kereru that delivers the fertiliser-packaged seeds back to the **environment**. The observation tower is a magnificent example of cooperation and triangulation! It gave us a rare birds-eye view into the forest. The staff are very informed, child-friendly, and helpful. The plunger coffee is fine. Maugatautari Mainland Island is an interesting example of the vital process of removing feral pests and allowing a part of NZ to rewild itself."*

In online reviews on the Canterbury region, the word 'environment' is related to words such as 'warm', 'stay', 'recycle' and 'comfortable', which suggests an association of the word with the accommodation experience of visitors (see first right quadrant). This is shown in the online review below.

*"My daughter and I stayed at Woodgrove Estates. We were looking for a quiet and relaxing B&B **environment** and Woodgrove far exceeded our expectations. The location is beautiful, peaceful and quiet with a stunning array of stars at night and a beautiful panoramic view during the day. Herman Melzer is the ultimate host who makes you feel immediately **comfortable** and welcome. The*

food was excellent and Herman kindly worked around my many food allergies. I highly recommend Woodgrove for a quick overnight stay on your way or for a longer stay where you can completely unwind from the hustle of daily life."

In online reviews on New Zealand by domestic visitors, there is an association between the word 'environment' and words such as 'animal' and 'zoo' but also associations with words such as 'bird', 'natural' and 'native' (second quadrant on the left).

For domestic visitors in reviews for the Canterbury region we can see a cluster of words related to 'family', 'children', 'young' and 'play', suggestive of the region offering a tourism experience suitable for young families (second quadrant on the right).

For international visitors, in reviews on New Zealand, there are two major clusters of words. The first relate to the word 'environment' and the accommodation experience and the second relate to the wildlife (third quadrant on the left). For the Canterbury region, a noticeable cluster of words around Kaikoura and the seals is evident (third quadrant on the right)

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UGC and 'Recycle' as a Word

Only 430 online reviews from international visitors included the word 'recycle' in comparison to 130 online reviews on the Canterbury region. It is clear that the word 'recycle' is associated with accommodation facilities with words such as 'clean', 'facilities', and 'stay', clustered together in both New Zealand and Canterbury specific reviews as shown in Figure 13 (first left and right quadrants). There are no differences in association of words with 'recycle' between international and domestic visitors. Two examples of online reviews are provided below.

*"We stayed for only one night in July and we so wish it could have been more. The rooms were the cleanest and most comfortable we have stayed in for years. Beds, televisions and furnishings were of the highest quality. The kitchenette area was supplied with everything the traveler needs if choosing to self-cater. Ken and Lyn were warm, friendly and very helpful; when asked, they offered to **recycle** my beer bottles! The location is a dream and will definitely visit again when in N.Z. Best of luck with the business Ken and Lyn. You deserve it."*

*"The Commodore is a very well run, lovely hotel. We stayed here because of the location and because we had an early morning flight. We were upgraded to a business suite which was just lovely. Robes were provided and there was a nice lounging couch. We liked having both a **recycle** and a trash bin in the room. Very thoughtful. The bed was comfortable and the room was very clean. The restaurant/bar was good and the prices seemed reasonable. A free shuttle was offered to the airport. We did not use the gym but it looked well equipped and cared for. The Commodore is an excellent choice for an overnight close to the airport."*

UGC and 'Conservation' as a Word

The word 'conservation' was mentioned in 1553 online reviews on New Zealand by international visitors compared to only 39 reviews on the Canterbury region. In both sets of reviews, the word 'conservation' was associated with 'wildlife' (see Figure 32). There are no differences in the words associated with conservation by international and domestic visitors. Two examples of online reviews are provided below.

*"Wingspan is a fantastic little bird park that does some really great work towards the **conservation** of New Zealand's native birds of prey, especially the New Zealand Falcon which is highly endangered. There is a little museum about falconry and aviaries containing rescued and captive bred birds. Be sure to meet the cheeky little Morepork who could entertain you all day! The best part is the free-flight display where you get to see a bird in action. We saw Hisan the New Zealand Falcon and he put on a spectacular show, his speed and agility was truly amazing. At the end of the show we even got to hold him (all included in the entry price of $25/adult). I would highly recommend to anyone interested in **wildlife** and **conservation** or wanting to learn more about both. Great for all ages! I would definitely visit again if in the area. Thanks for a great afternoon Wingspan!"*

*"We had a great visit to Orana park with a 2 and 4 year old. It's a wide-open mostly flat park with great paths for strollers and push chairs, and an excellent array of different animals. The new Gorilla enclosure was a real treat - that ape is the most fearsome thing I have seen so close in my life. If you are from out of town, and haven't had an opportunity to participate in a **conservation** style **wildlife** experience before, I would recommend setting a day aside for it. Note - some teens might be 'too cool' for it, but you will know your own kids best."*

UGC and 'Traffic' a Word

As a negative facet of environmental sustainability, the word 'traffic' was mentioned in 3952 online reviews on New Zealand by international visitors. For the Canterbury region, the word appeared in 559 online reviews by international visitors. As shown in Figure 15 (first left and right quadrants), the word 'traffic' is associated with words such as 'noise', 'hotel', 'night', and 'room'. This may suggest that a negative aspect of the accommodation experience is related to noise from traffic. Two examples of online reviews are provided below. As the second example illustrates, tourists are not always associating traffic with "bad". No traffic is part of the positive destination experience as well. There are no differences in words associated with 'traffic' by international and domestic visitors.

*"Travelled to Porirua, a suburb approx 25min ride from Wellington Airport for a friend's wedding. Only stayed 2 nights so was keen to find quality, clean accommodation which could provide a good night's rest. Located centrally in Porirua adjacent to off-ramp to main Highway we found Belmont Motor Lodge. We were greeted by friendly owners/managers and we booked a 1 bedroom apartment. The 1 bedroom apartment includes in the bedroom a comfortable King size Bed, a separate living room with double sofa bed; TV, a kitchenette with microwave, dinner table for 4; spa bath in the bathroom. Only downside was our apartment backed onto a busy **traffic** roundabout, but each evening we were so tired we hardly noticed any **traffic** noise. I travel extensively for work; found this motel to be 'above average' motels in Porirua. 4 star property. It is modern, clean, less than 5min drive to the main North City Plaza shopping Ctr; approx 3min walk to Porirua Train Station. I recommend to singles, families & business travelers looking to stopover in Porirua for a few nights."*

*"Came here over Easter to get out of Auckland to get out of town and relax and was blown away with our stay. The accommodation is far enough away that you feel like you've left the rat race but are close enough that you don't have to fight the **traffic** to get away during the holiday madness, not to mention you're surrounded by lovely restaurants and vineyards (the reason for staying here). The rooms have a very rustic feel that was amazing (would love to own a holiday property with the feel of the cottage) and offer a lot of privacy as you're surrounded by trees which I found very*

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calming. Can't describe how much we loved the theme of the rooms. Needless to say, this was the break I needed and can't wait for my next holiday out here"

UGC and 'Litter' as a Word

The word 'litter' appeared in 308 online reviews on New Zealand by international visitors compared to 44 reviews on the Canterbury region. Figure 34 (first left and right quadrants), shows that the word 'litter' was used with other words related to the accommodation experience in both reviews on New Zealand and the Canterbury region. An example of an online review is provided below.

*"We recently stayed at the Auckland Harbour Oaks and to be honest we felt more than a little let down. The hotel website and reality are very far apart. Whilst the rooms were clean and well equipped, washer, dryer, dishwasher, toaster etc. but no aircon so I would guess they get hot in the summer. They were more than a little well used. As for the pool, this was the one reason we booked this hotel. We knew we'd be more than a little tired after flying for 27 hour and felt a swim would stretch everything. After checking in we went down to the pool to check it out and wish we'd never bothered. The pool area looked like a building site and the pool had **loads of litter** in it, some of which had obviously"*

For domestic visitors, the word 'litter' also appears to be associated in reviews on New Zealand with words such as 'beach', 'walk', 'track' and 'easy' (second quadrant on the left). For the Canterbury region, 'litter' is associated with 'botanic', 'roses', 'trees', 'Avon', 'river' and 'café' (second quadrant on the right). This potentially suggest an association between litter and the Botanical gardens. However, as the review below shows, the lack of litter is a positive aspect of the destination experience.

*"Christchurch Botanic Gardens are a credit to Christchurch. It is always well maintained and **litter free**. The traditional Rose Garden is a personal favorite, the roses are very well looked after and bloom for ages, go and see you won't be disappointed (unless you go in winter)"*

The associations with the word 'litter' by international visitors reflect issues with the accommodation experience.

UGC and 'Waste' as a Word

The word 'waste' was mentioned by international visitors in 1430 online reviews on New Zealand compared to 181 reviews on the Canterbury region. In all New Zealand reviews, the word 'waste' is associated with two different sets of words. The first set relates to the accommodation experience with the word 'waste' associated with other words such as 'bathroom', 'rubbish', 'bin', 'room' and 'night', as shown in Figure 35 (first left quadrant). This is illustrated in the following online review.

"Thought I would try the Amble Inn as it was local and I'm a great believer in supporting local businesses. Room smelly, beds were grubby, holes in walls and doors, mouldy windowsills, cigarette butts outside the entrance door, I could go on but don't waste your money on staying here. Far better ones up and down the strip."

The second set of words relates to word 'waste' being associated with 'time' in the context of hotel booking or checking process as shown in the following online review.

*"Don't **waste your time**. I booked 2 rooms through wotif. I emailed and asked for the 2 rooms to be situated close by if possible. Didn't get a response for a week and when I did…. 'we don't have notification of your **booking** and sorry (not sorry) we can't accommodate you'. There were other rooms available, but they*

refused to upgrade. They offered me rooms at another one of their motels… the admiral… which looked like a complete dump. Avoid also! They then lied to the booking agent saying I had a child travelling with me and it wasn't safe for a child to be accommodate in their establishment. I didn't have a child travelling with me, I mentioned I was traveling with a friend. Although I didn't realise children were banned from this establishment. They gave me some BS story that they had just taken over, but that's no excuse for a stuck up attitude and down right incompetence. I can only assume if they treat all their paying guest this way they won't be in business long. Let's hope! Avoid! Spend your hard earned elsewhere, where you may actually get what you paid for. And not fobbed off. Zero service, bad attitudes and thankfully the good folk at wotif/Expedia were also disgusted and apologised and booked me a couple of 5 star rooms in town at the same rate. As the owners didn't care less!"

In all online reviews for the Canterbury region, the word 'waste' is primarily associated with waste of money or time with booked accommodation (first right quadrant). Interestingly, the word 'waste' is specifically associated with words related to service delivery by both international and domestic visitors.
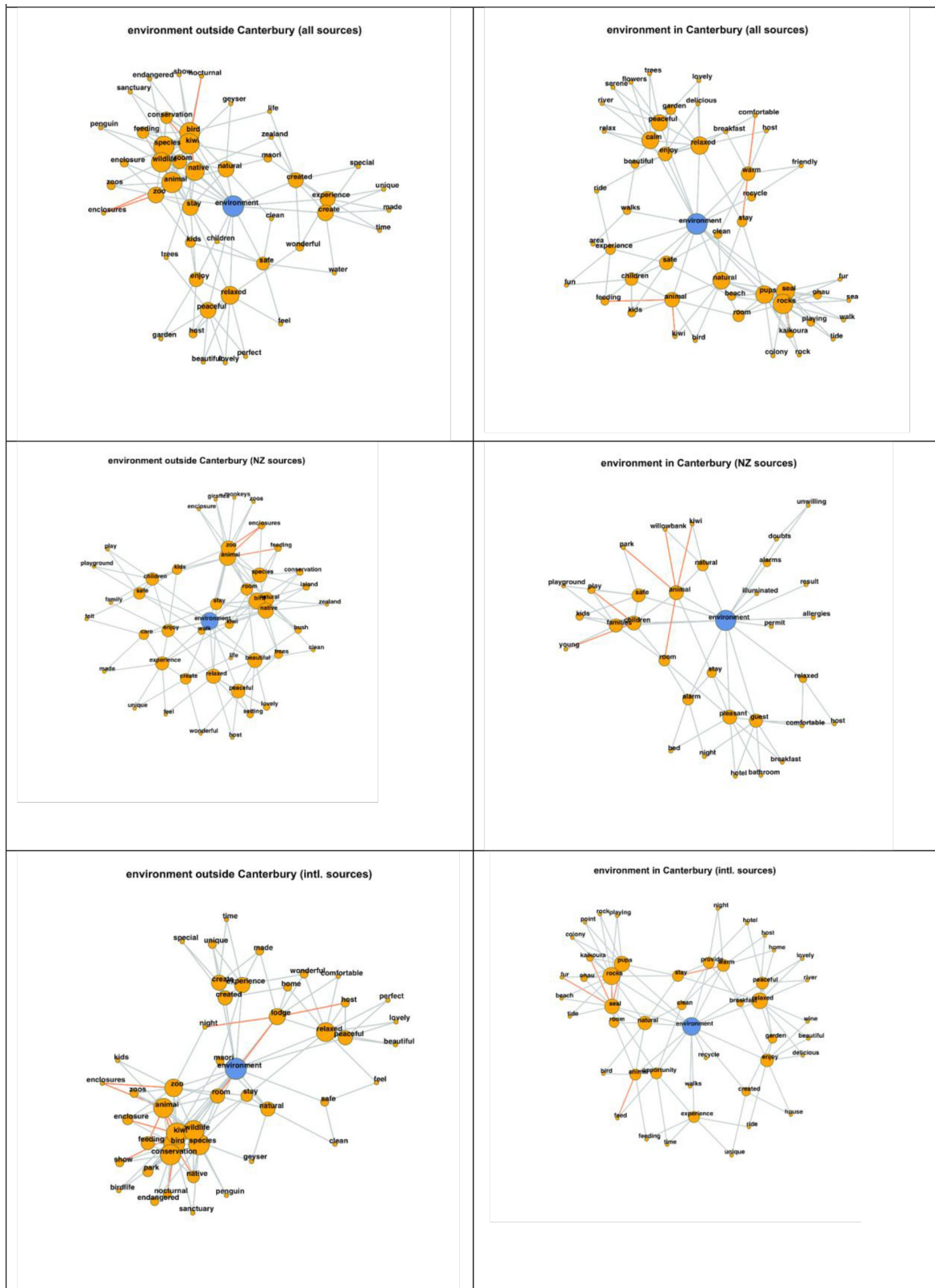
Findings

Figure 12: UGC and 'Environment' as a Word
Canterbury, from NZ = 185; Canterbury, from Intl = 456; NZ, from NZ = 1,583; NZ, from Intl = 3,167.
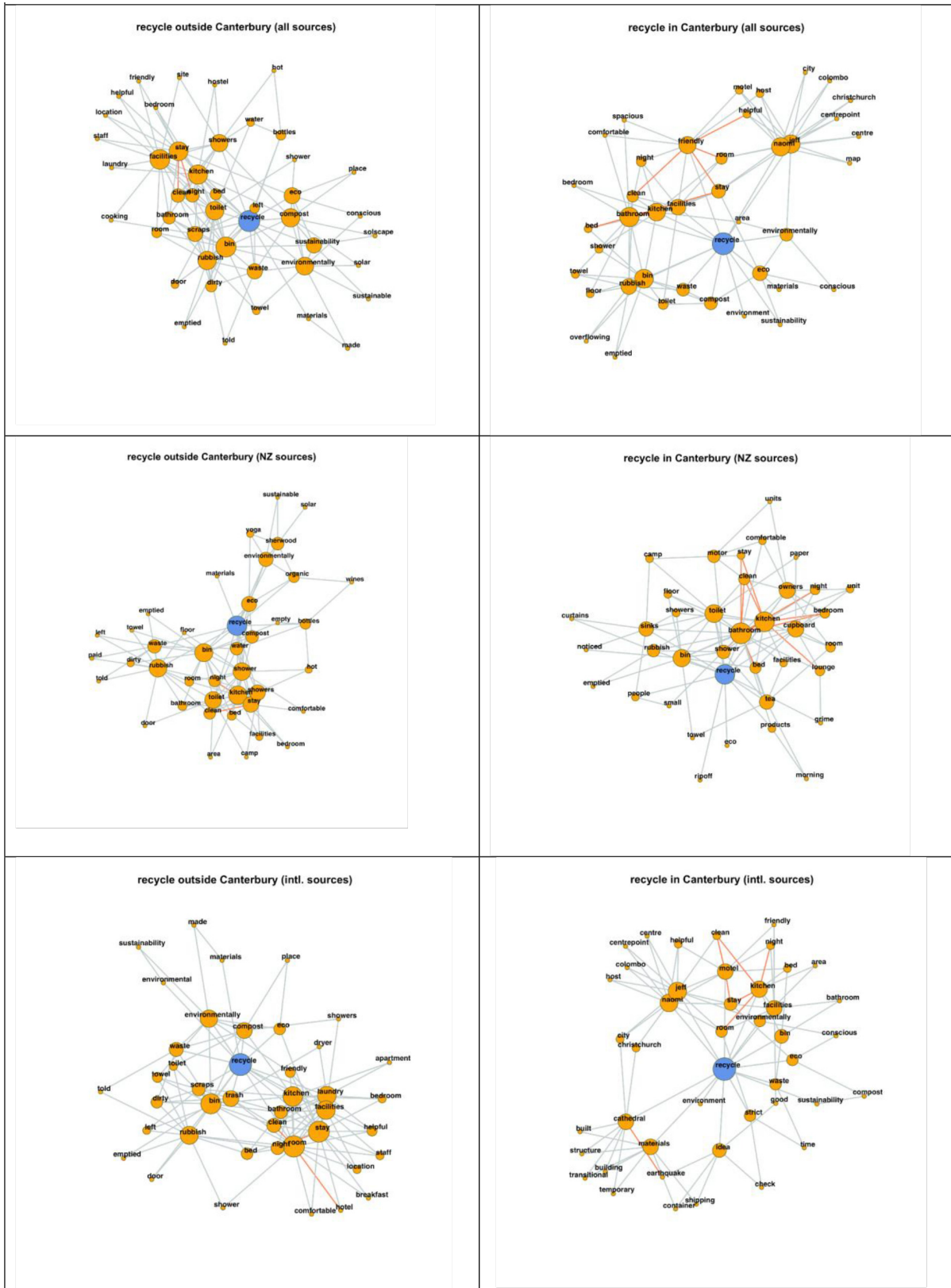
Findings

Figure 13: UGC and 'Recycle' as a Word
Canterbury, from NZ = 45; Canterbury, from Intl = 103; NZ, from NZ = 248; NZ, from Intl = 430.
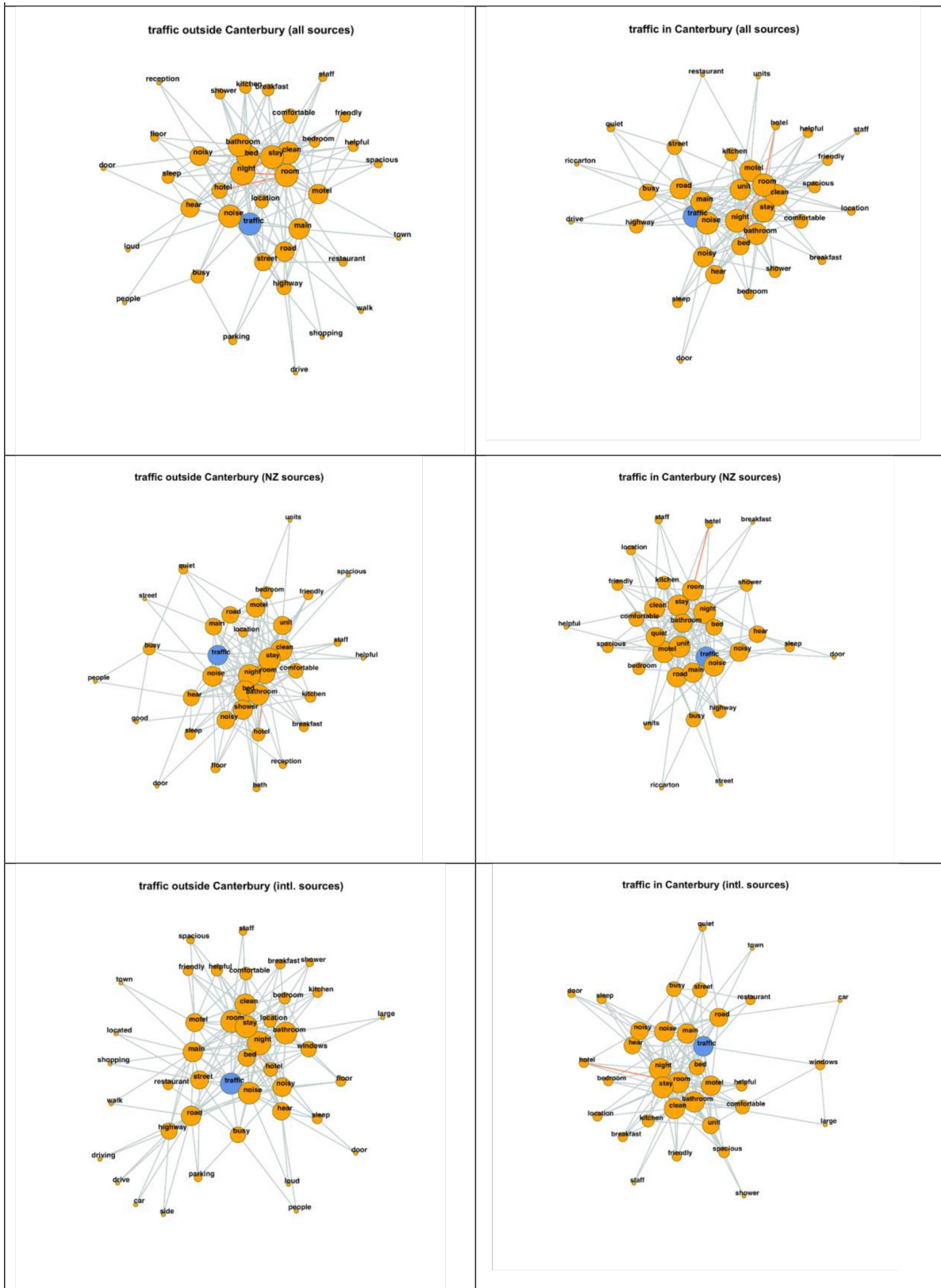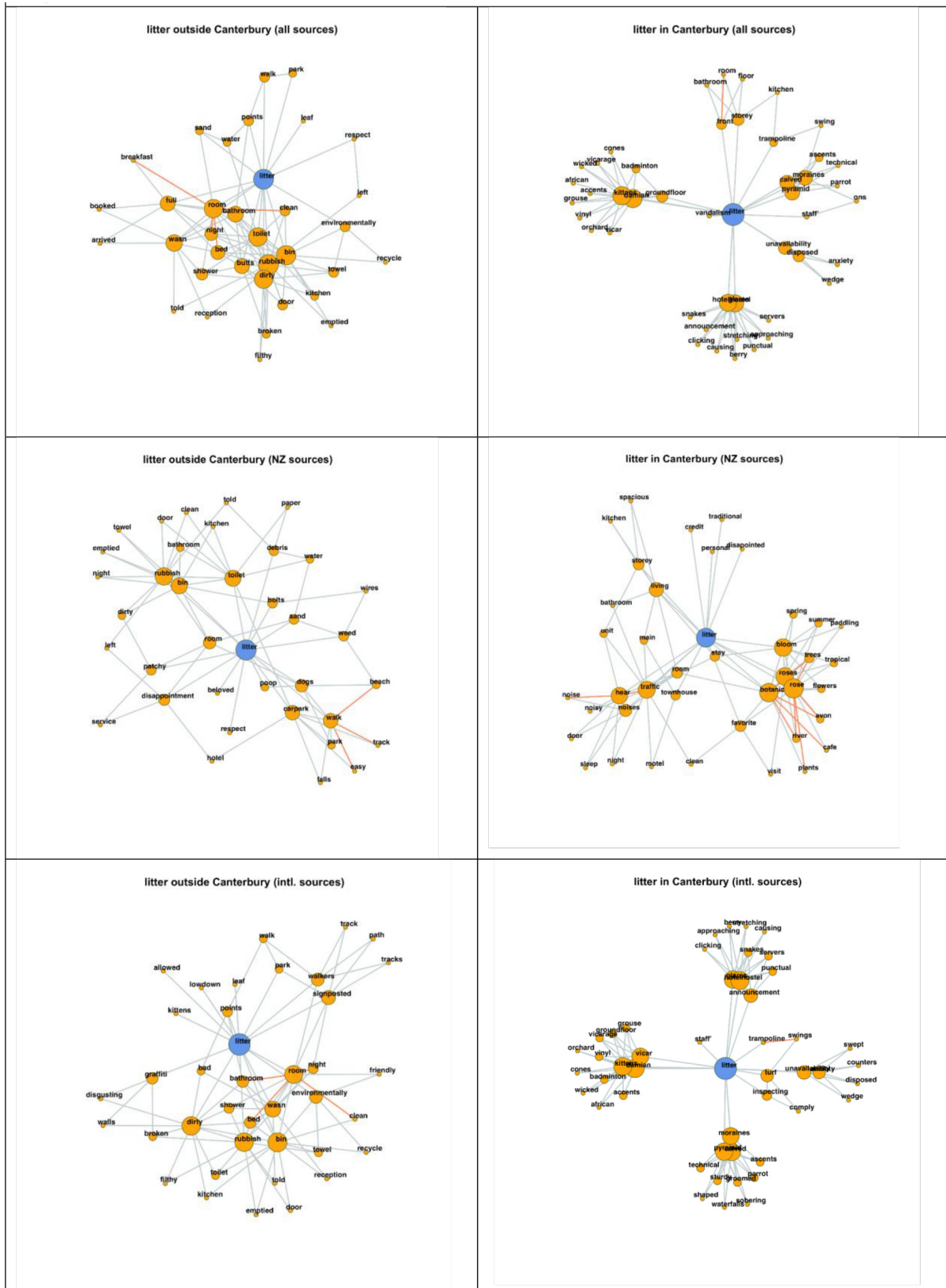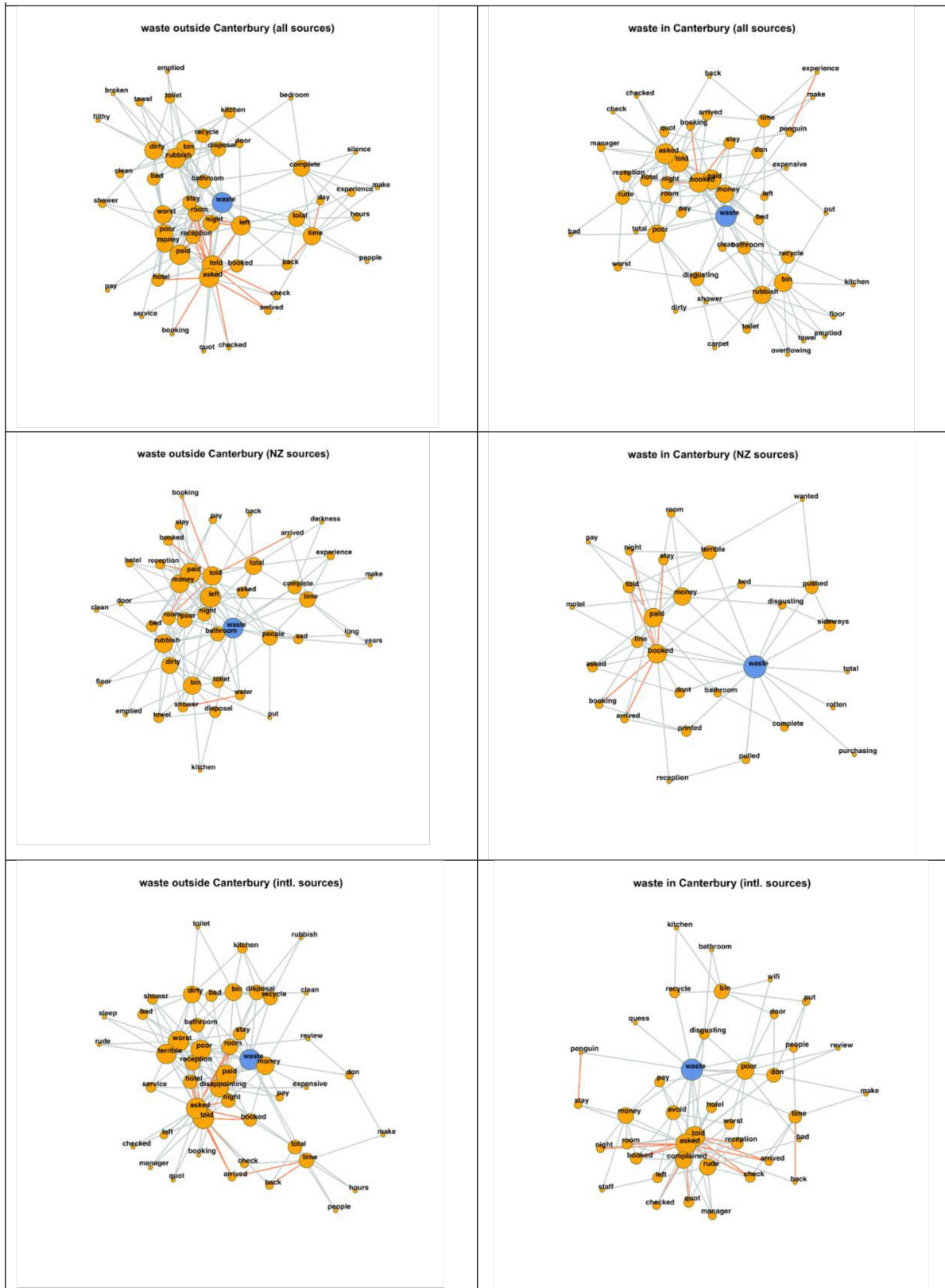
Findings

Figure 14: UGC and 'Conservation' as a Word
Canterbury, from NZ = 13; Canterbury, from Intl = 39; NZ, from NZ = 365; NZ, from Intl = 1,533.

Findings

Figure 15: UGC and 'Traffic' as a Word
Canterbury, from NZ = 263; Canterbury, from Intl = 559; NZ, from NZ = 2,040; NZ, from Intl = 3,952.

Findings

Figure 16: UGC and 'Litter' as a Word
Canterbury, from NZ = 11; Canterbury, from Intl = 44; NZ, from NZ = 148; NZ, from Intl = 308.

Findings

Figure 17: UGC and 'Waste' as a Word
Canterbury, from NZ = 60; Canterbury, from Intl = 181; NZ, from NZ = 584; NZ, from Intl = 1,430.

Findings

An overall picture of words associated with sustainability

Figure 18 shows the distribution of the key words used to search the online reviews by international visitors. Of the 716, 274 reviews, very few talk about words that relate to environmental sustainability despite its supposed significance for New Zealand's international positioning. In terms of economic sustainability 'price' and 'rent' are the words with the most common occurrence. In terms of social sustainability, words such as 'local' and 'friendly' have the most occurrence in reviews.

Figure 19 shows the distribution of key words related to sustainability by domestic visitors. A similar pattern as that for international visitors can be observed.
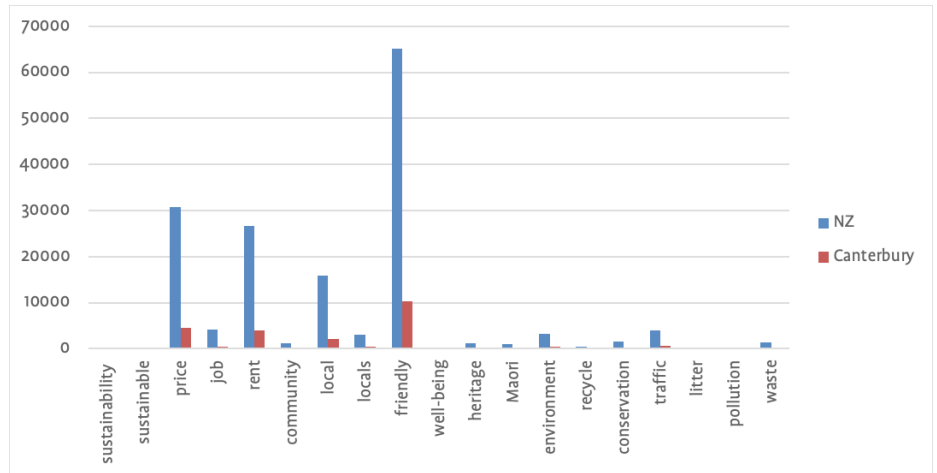
Figure 18: No. of reviews on key words related to sustainability by international visitors
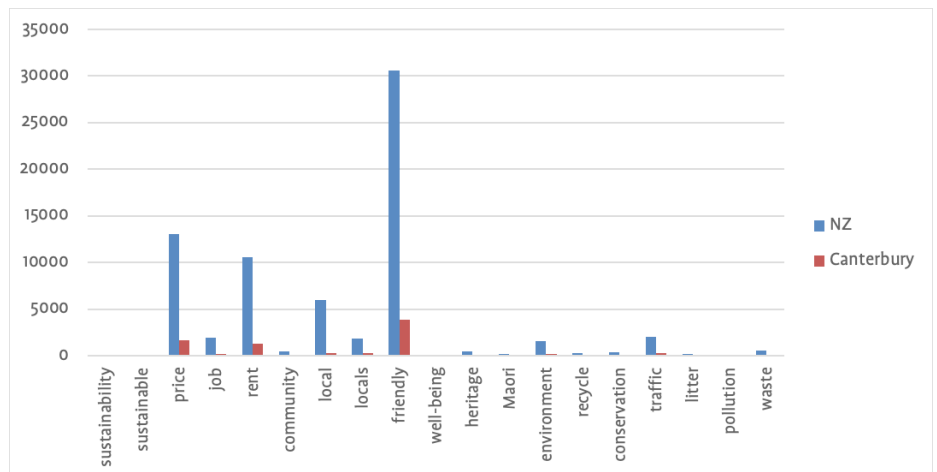
Figure 19: No. of reviews on key words related to sustainability by domestic visitors

Findings

Findings from IVS Analysis

Envionmental Practice Ratings (EPR) by Main Socio-Demographics of International Visitors to New Zealand

This section of the report outlines the main trends in EPR by main socio-demographic characteristics of international visitors. We **reverse coded** the scores for EPR to make the findings more intuitive. This means that high scores in this section reflect better perceptions of EPR compared to the rest of the world and low scores reflect worst perceptions compared to the rest of the world.

We created five identical OLS regression models with each Environmental Practice Ratings as a dependent variable. Independent variables are as listed in Table 2 (from section 2). We used population weights on the sampled data to reflect the true international visitor population of New Zealand. We then estimated predictive margins for the covariates of interest, which we report below. The advantage of this method is that we are able to establish the mean for the desired effect (say country of origin) averaged over the other variables in our model. This allows for a more meaningful comparison between different categories.

Evolution of EPR overtime (2014-2018)

From Figure 20, it is clear that overall perceptions of environmental management practices have remained the same over the last five years. Also, perceptions of environmental practices related to commercial accommodation, activities/attractions, public infrastructure and visitor transport have remained at the same levels over this period.

EPR and Country of Origin of International Visitors

Figure 21 shows that EPRs from the seven major source markets based on 41587 international visitors weighted using population weights. Over the five year-period average perceptions of overall environmental management remain high for visitors from China (4.16) and U.S. (4.12) but low for German visitors (3.69). In fact, Table 4 shows that average perceptions are low for

international visitors from European markets in general (Austria-3.66, France-3.82, Italy-3.99) and visitors from Nordic countries such as Norway (3.62), Finland (3.88) and Sweden (3.54) on this attribute. The lowest average score on overall environmental management is from visitors from Switzerland (3.57) and highest average score is from visitors from Philippines (4.48).

From Figure 21, perceptions of environmental practices remain, on average, low for visitor transport across all the seven major source markets. Table 4 shows that, on average, a high score was given only by visitors from South Africa (4.07) and the Philippines (4.07). Despite

rating environmental practices by commercial accommodation providers (3.70), public infrastructure (3.87) and visitor transport (3.67) as low, visitors from China gave a high average score to overall environmental management (4.16). A similar trend can also be observed for visitors from Belgium, Hong Kong, Indonesia, Israel, Singapore, Taiwan, Thailand, and United Arab Emirates. Asian-centric markets tend to have better perceptions of overall environmental management practices compared to Western-centric markets.
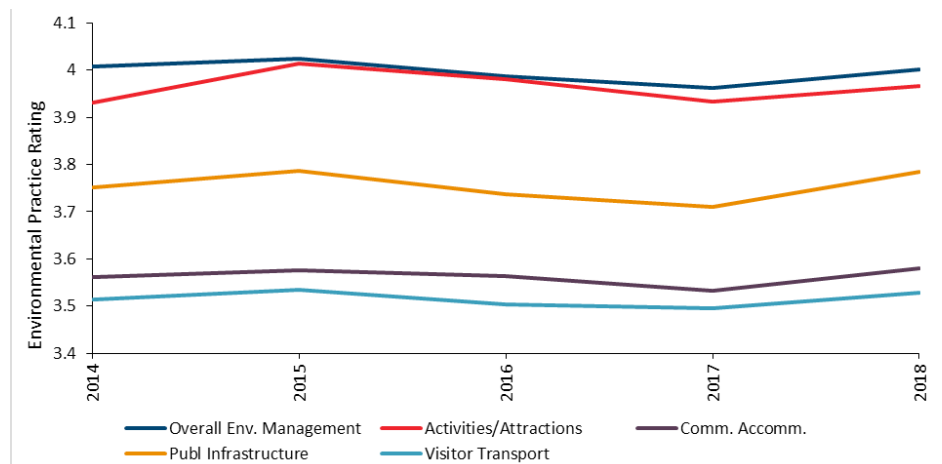
Figure 20: Environmental Practice Ratings by Time
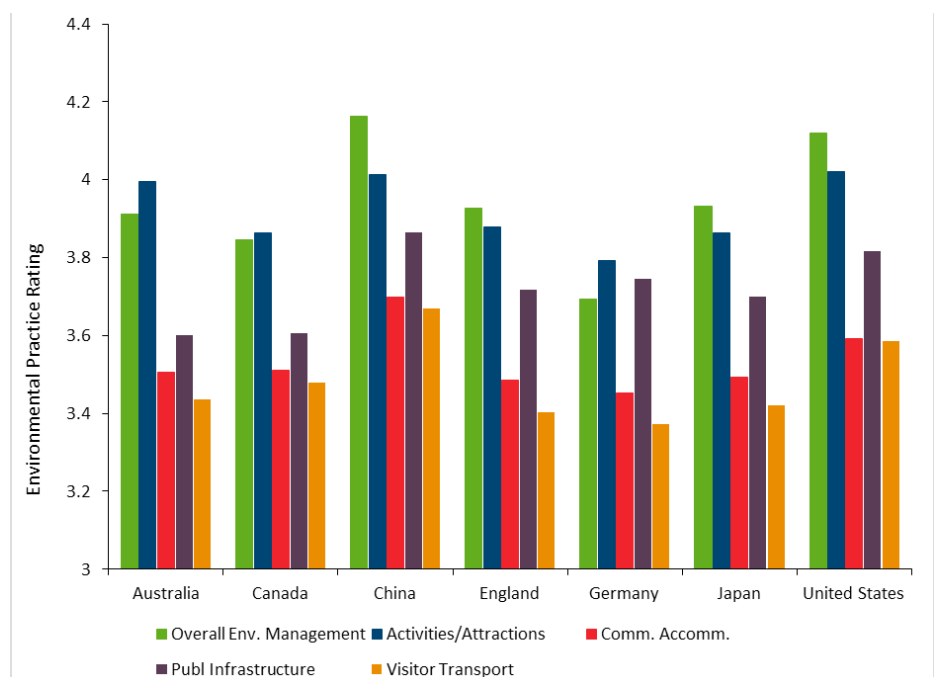
Figure 21: Environmental Practice Ratings by Country of Origin

Findings

Source Market	Overall Env. Management	Activities/ Attractions	Comm. Accomm.	Public Infrastructure	Visitor Transport
1. Australia	3.91	4.00	3.51	3.60	3.44
2. Austria	3.66	3.90	3.43	3.66	3.36
3. Belgium	4.10	3.80	3.50	3.84	3.51
4. Brazil	3.85	3.67	3.13	3.77	3.34
5. Canada	3.85	3.86	3.51	3.61	3.48
6. China	4.16	4.01	3.70	3.87	3.67
7. Cook Islands	3.95	4.18	3.97	4.75	2.96
8. Denmark	3.89	3.82	3.49	3.68	3.26
9. England	3.93	3.88	3.48	3.72	3.40
10. Fiji	4.18	4.03	3.72	4.34	3.77
11. Finland	3.88	3.95	3.31	3.78	3.44
12. France	3.82	3.70	3.37	3.82	3.39
13. French Polynesia	4.01	4.33	4.24	4.42	3.61
14. Germany	3.69	3.79	3.45	3.74	3.37
15. Hong Kong	4.10	3.84	3.58	3.70	3.37
16. India	4.39	4.28	3.84	4.04	3.94
17. Indonesia	4.02	3.93	3.30	3.58	3.44
18. Ireland	3.99	4.15	3.62	3.92	3.49
19. Israel	4.06	3.84	3.36	3.86	3.21
20. Italy	3.99	4.01	3.32	3.87	3.55
21. Japan	3.93	3.86	3.49	3.70	3.42
22. Korea	3.96	3.85	3.53	3.64	3.49
23. Malaysia	4.36	4.18	3.76	4.02	3.75
24. Netherlands	3.88	3.71	3.51	3.94	3.32
25. Norway	3.62	3.62	3.26	3.38	2.97
26, Other	3.96	3.85	3.48	3.98	3.71
27. Philippines	4.48	4.30	3.95	4.20	4.07
28. Samoa	3.77	4.08	3.83	3.53	3.20
29. Scotland	3.68	3.83	3.57	3.64	3.28
30. Singapore	4.03	4.02	3.63	3.76	3.51
31. South Africa	4.46	4.22	3.82	4.12	4.07
32. Spain	4.18	3.73	3.43	3.89	3.45
33. Sweden	3.74	3.86	3.46	3.71	3.47
34. Switzerland	3.57	3.69	3.38	3.53	3.26
35. Taiwan	4.23	3.93	3.67	3.81	3.34
36. Thailand	4.10	3.90	3.56	3.49	3.48
37. United Arab Emirates	4.07	4.11	3.43	3.88	3.30
38. United States of America	4.12	4.02	3.59	3.82	3.58
39. Wales	3.76	3.86	3.50	3.41	3.68

Table 4: Average scores on EPRs from all source markets

Findings

EPR and Length of Stay of International Visitors

Figure 22 shows that visitors staying longer than 3 months, on average had the worst perceptions of all environmental practices. For those staying up to 90 days, their perceptions of overall environmental management practices and those related specifically to activities/attractions were very similar, ranging from 3.94 (1-6 days) to 4.02 (30-89 days). For this group, their perceptions of environmental practices relating to commercial accommodation and visitor transport were the lowest. For commercial accommodation, these perceptions ranged from a low of 3.54 to a high of 3.58. For visitor transport, these perceptions ranged from a low of 3.50 to a high of 3.527.

EPR and Type of Travel by International Visitors

Figure 23 shows that perceptions of overall environmental management practices are very similar for visitors travelling independently (3.98) compared to those travelling on a package tour (4.01). These visitors have also very similar perceptions of environmental practices for activities and attractions. However, a small difference exists between the two groups on perceptions of environmental practices in commercial accommodation, public infrastructure and visitor transport. Package tourists tend to have slightly better perceptions than independent travellers.

EPR and Age Group of International Visitors

As shown in Figure 24, the younger age groups (18-24 years old and 25-34 years old) have better perceptions of all the five environmental practices measured by IVS in comparison to elder visitors. Notably, the 18-24 age group had the best perceptions of environmental practices related to activities/attractions (4.07) and overall environmental management (4.09). The age group of 35-49 years old had on average the lowest perceptions on all five environmental practices.

Figure 22: Environmental Practice Ratings by Length of Stay (Source: ChristchurchNZ)

Figure 23: Environmental Practice Ratings by Travel Type
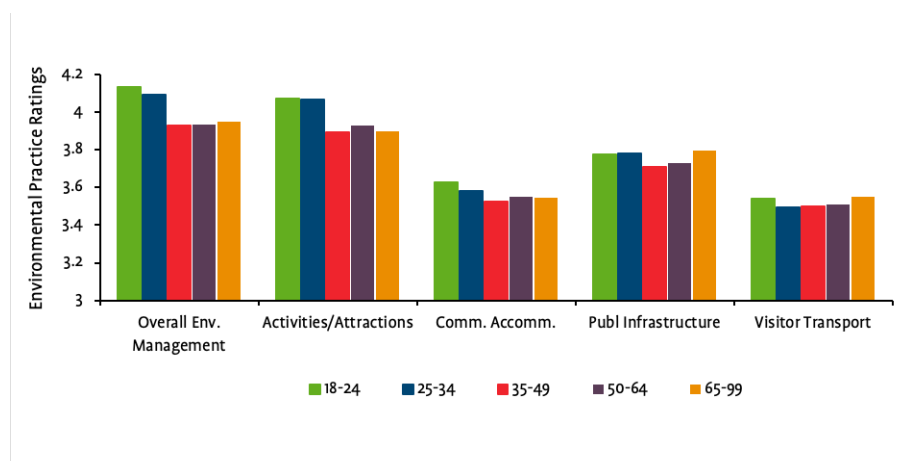
Figure 24: Environmental Practice Ratings by Age Group (Source: Christchurch NZ)

Findings

EPR and Traveller Type

Figure 25 shows that solo travellers had better perceptions of all the five environmental practices compared to those travelling with others. For example, solo travellers rated on average environmental practices related to public transport higher (3.77) compared to those travelling with others (3.68). The former (4.01) also rated overall environmental management practices higher than the latter (3.94).

EPR and Length of Stay in the Canterbury Region

Figure 26, shows that there are very small differences on perceptions of environmental practices between international visitors spending either 25% or 50% or 75% of their length of stay in the Canterbury region. For example, of those spending 75% of their time in this region, their perceptions of environmental practices in the visitor transport (3.59), public infrastructure (3.80), commercial accommodation (3.61), activities/attractions (3.97) and overall environmental management (4.04) were the highest in comparison to those who spent between 25% to 50% of their time in the region

EPR and Gender of International Visitors

Figure 27 shows that except for the environmental practices of activities/attractions, female visitors tend to rate the other environmental practices higher compared to their male counterparts. For example, environmental practices of visitor transport was on average rated higher by female visitors (3.54) compared to male visitors (3.48).
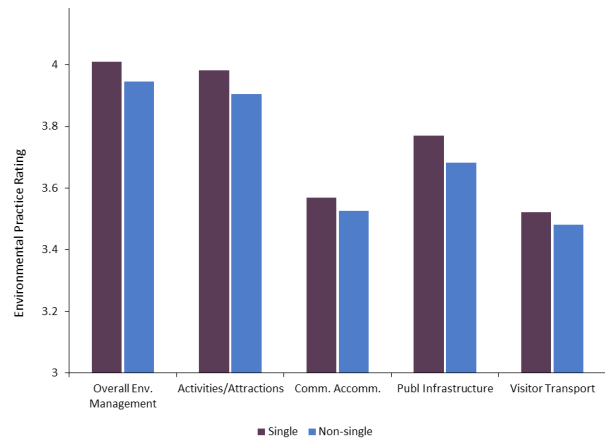
Figure 25: Environmental Practice Ratings by Traveller Type
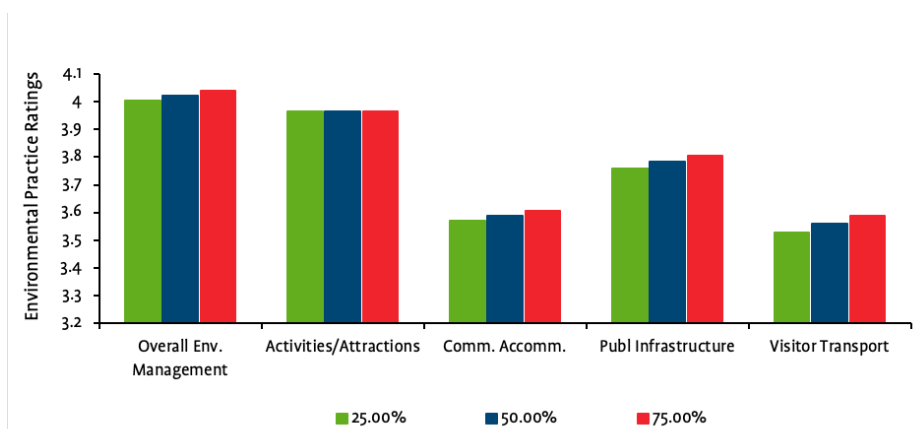
Figure 26: Environmental Practice Ratings by Percentage of Time Spent in the Canterbury Region (Source: ChristchurchNZ)
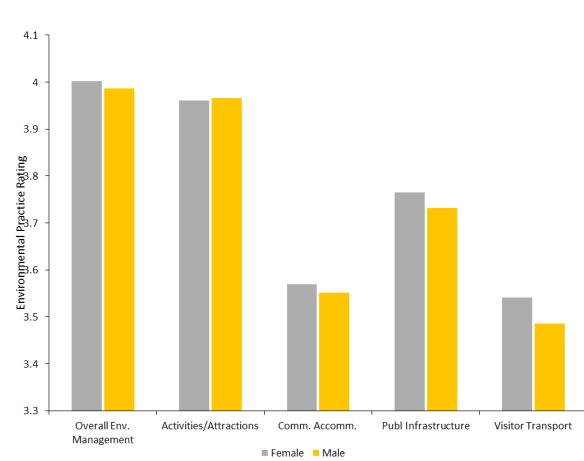
Figure 27: Environmental Practice Ratings by Gender

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EPR and Accommodation Types Used by International Visitors

Figure 28 shows major differences in perceptions of the five categories of environmental practices by accommodation type used by international visitors. On average, high scores were assigned to perceptions of overall environmental management and environmental practices of activities/attractions irrespective of the type of accommodation used. In contrast, low scores were attributed to perceptions of environmental practices for commercial accommodation and visitor transport.

Table 5 shows that visitors staying in B&B (3.95), luxury (3.94) and private (3.91) accommodation had the lowest average scores on their perceptions of overall environmental management practices. Freedom campers (4.06) had the highest score on this attribute. International visitors staying in backpackers/hostel had the highest score for environmental practices of activities/attractions (4.06). Interestingly freedom campers rated the environmental practices of the commercial accommodation sector the lowest (3.44). Visitors staying in luxury hotels rated the environmental practices of the commercial accommodation sector the highest (3.68). Visitors staying in backpackers/hostels (3.80) and motels (3.84) rated the environmental practices related to public infrastructure the highest.

EPR and Weighted Spend by International Visitors

Perceptions of the five environmental practices by international visitors did not differ on the basis of their weighted spend. As shown in Figure 29, the ratings are very similar between those spending between $1000 and $10000 on their trip.
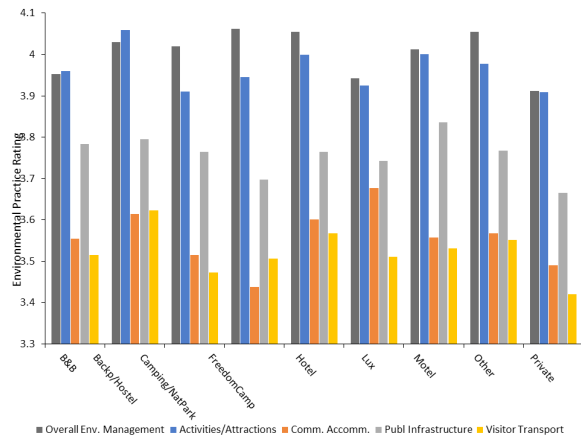
Figure 28: Environmental Practice Ratings by Accommodation Types Used
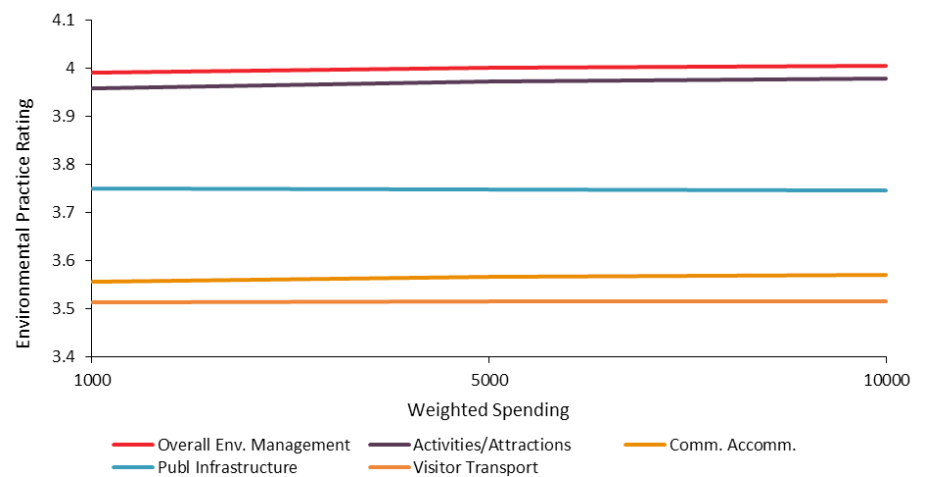
Figure 29: Environmental Practice Ratings by Weighted Spend

Accommodation Type	Overall Env. Management	Activities/ Attractions	Comm. Accomm.	Public Infrastructure	Visitor Transport
B&B	3.95	3.96	3.55	3.78	3.51
Backpackers/Hostel	4.03	4.06	3.61	3.80	3.62
Camping/National Park	4.02	3.91	3.51	3.76	3.47
Freedom Camping	4.06	3.95	3.44	3.70	3.51
Hotel	4.05	4.00	3.60	3.76	3.57
Lux	3.94	3.93	3.68	3.74	3.51
Motel	4.01	4.00	3.56	3.84	3.53
Other	4.05	3.98	3.57	3.77	3.55

Table 5: Environmental Practice Ratings and Accommodation Types Used

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EPR and Overall Satisfaction of International Visitors

Figure 30 shows that for international visitors rating overall satisfaction six and less, there are differences in perceptions of the five environmental practices. For example, Table 6 shows that on the criteria of overall environmental management, international visitors with low satisfaction levels (1) and (3) rated this criterion as 3.50 and 2.63 respectively. On the criterion of environmental practices by the commercial accommodation sector, international visitors rated this criterion from a low of 2.79 to 2.99 for overall satisfaction levels of 1 and 5 respectively. Figure 30 also shows that perceptions of environmental practices improve significantly with higher levels of satisfaction (6 and above).

Expectations of the Natural Environment by Main Socio-Demographics of International Visitors to New Zealand

Expectations of the Natural Environment by International Visitors

IVS data also measures expectations of international visitors with respect to the natural environment based on the question "Did New Zealand's natural environment meet your expectations?". An analysis of this data shows the percentage of international visitors mentioning that their expectations were exceeded have increased from 54.67% in 2014 to 58.78% in 2018 as shown in Figure 31. Following a similar analysis as before, we created two identical logistic regression models with the

Figure 30: Environmental Practice Ratings by Overall Satisfaction
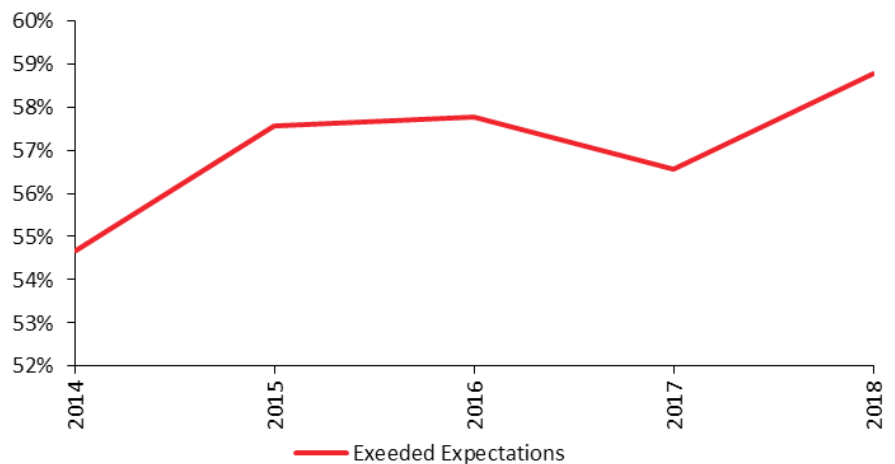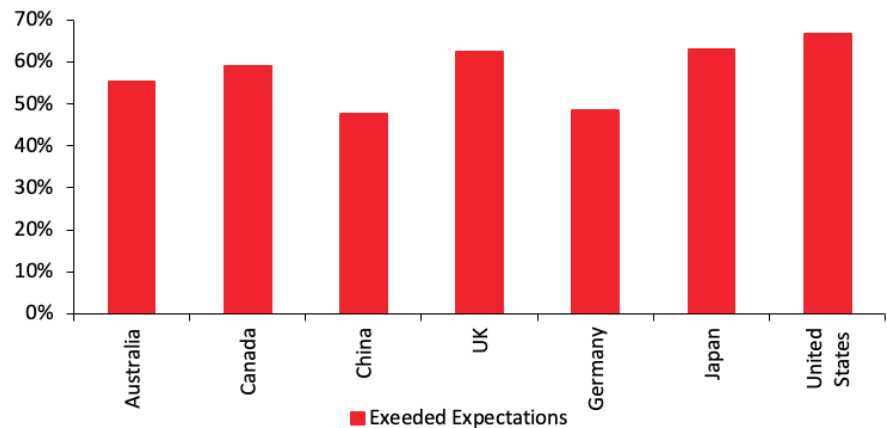
Figure 31: Expectations of Natural Environment by Time (Source: ChristchurchNZ)
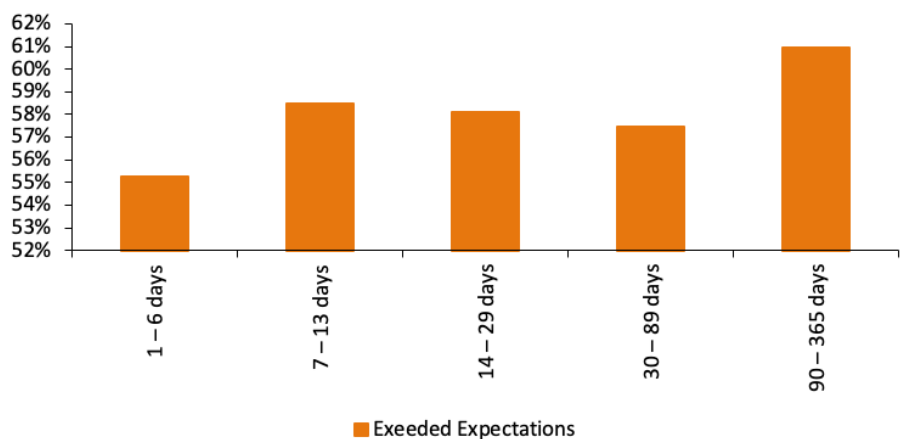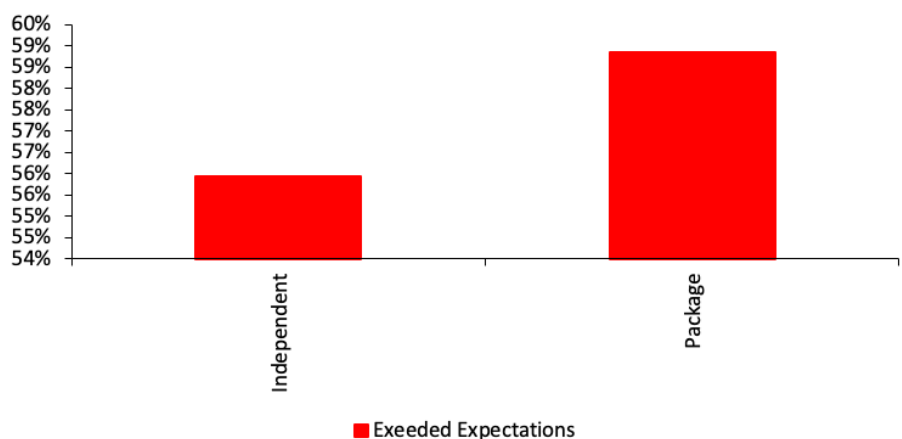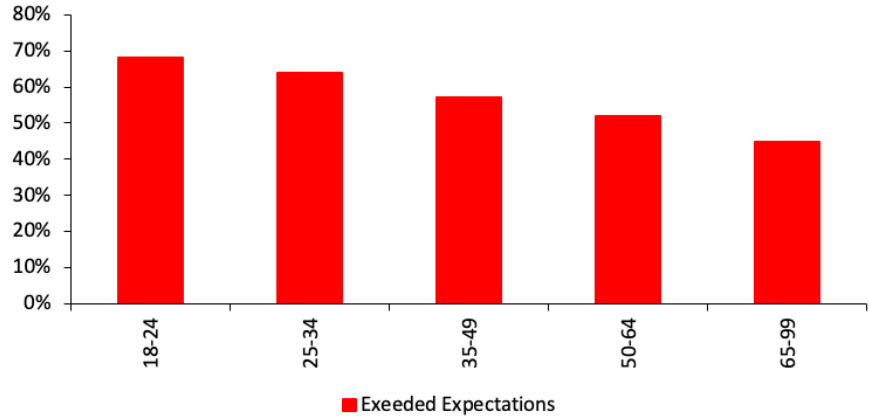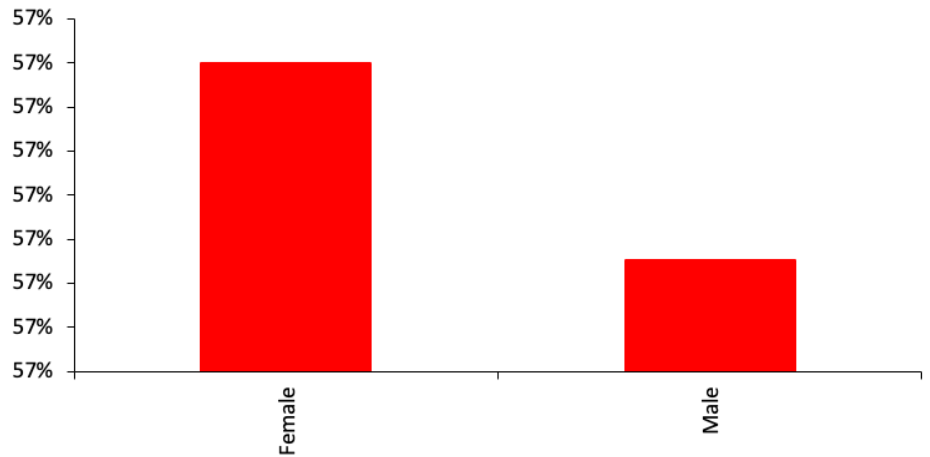*Percentage of those who thought New Zealands natural environment exceeded their expectations.*

Satisfaction Levels	Overall Env. Management	Activities/ Attractions	Comm. Accomm.	Public Infrastructure	Visitor Transport
1	3.50	3.58	3.60	3.10	3.50
2	2.90	3.21	2.92	2.48	2.56
3	2.63	3.03	2.93	3.16	2.55
4	3.25	3.00	2.79	2.69	2.95
5	3.45	3.18	2.99	3.35	2.93
6	3.34	3.16	3.10	3.12	2.80
7	3.55	3.55	3.12	3.39	3.10
8	3.74	3.71	3.36	3.51	3.30
9	3.99	3.96	3.52	3.73	3.46
10	4.18	4.15	3.75	3.93	3.72

Table 6: Environmental Practice Ratingsand overall satisfaction of international visitors

Findings

"expectation of the natural environment" and "environmental lifestyle" as dependent variables. Logistic regression models were used as these two dependent variables are less of a continuous nature. This type of modelling enables us to determine the probability of the outcome category in question. Again, independent variables were as listed in Table 2 (from section 2). We used population weights on the sampled data to reflect the true international visitor population of New Zealand. We then estimated predictive margins for the covariates of interest, which we report below. The advantage of this method is that we were able to establish the probability for the desired effect (say country of origin) averaged over the other variables in our model. This allows for a more meaningful comparison between different categories.

Expectations of International Visitors by Country of Origin

Figure 32 shows that expectations with respect to the natural environment are exceeded for a high percentage of visitors from U.S. (71.89%), Canada (60.11%) and UK (64.16%). However, less than half of visitors from China (48.58%) have their expectations exceeded, with both Australia (53.08%) and Germany (51.82%) having slightly more than 50% perceiving their expectations were exceeded.

Expectations of International Visitors by Length of Stay

In general, the longer international visitors stayed, the higher the percentage of those who consider that the natural environment in New Zealand exceeded their expectations, except for those who stayed between 30 to 89 days (57.46%). As shown in Figure 33, 55.28% of visitors who stayed between 1 to 6 days had their expectations exceeded compared to 60.95% of those who stayed between 90 days to 1 year.

Expectations of International Visitors by Type of Travel

As shown in Figure 34, packaged visitors have their expectations exceeded (60.62%) more than independent visitors (54.65%).

Figure 32: Expectations of Natural Environment by Country of Origin (Source: ChristchurchNZ)
Percentage of those who thought New Zealands natural environment exceeded their expectations.

Figure 33: Expectations of Natural Environment by Length of Stay (Source: ChristchurchNZ)
Percentage of those who thought New Zealands natural environment exceeded their expectations.

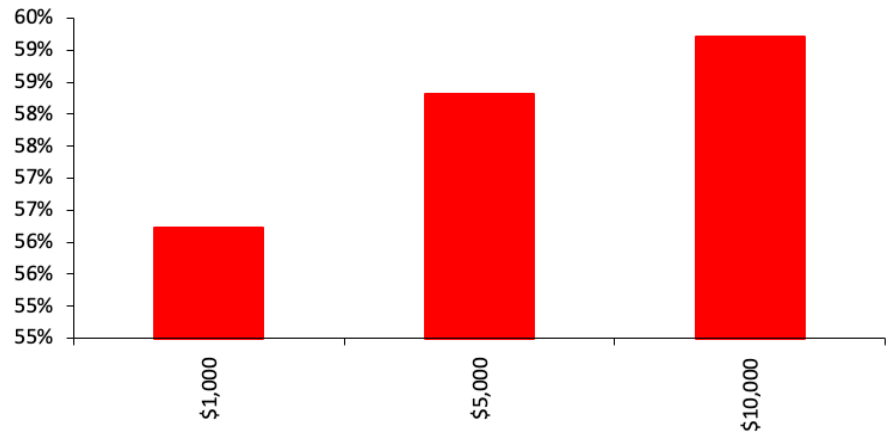
Figure 34: Expectations of Natural Environment by Travel Type (Source: ChristchurchNZ)
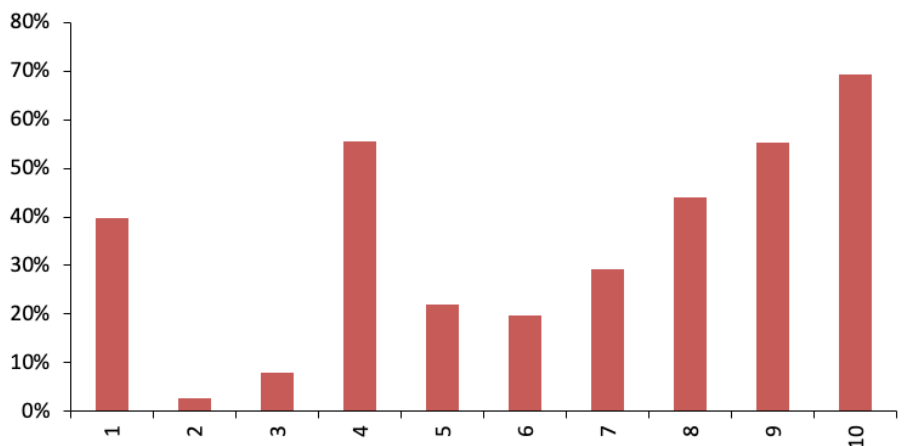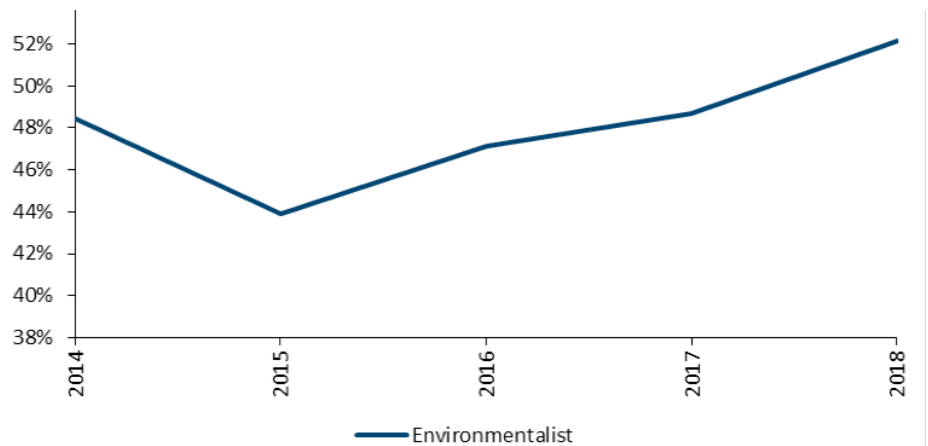*Percentage of those who thought New Zealands natural environment exceeded their expectations.*

Findings

Expectations of International Visitors by Age Groups

From Figure 35, it is clear that fewer (48.34%) older visitors (65+) have their expectations exceeded with respect to the natural environment in comparison to younger visitors (18-24 and 25-34 years old). In fact, the age group 18-24 years old has the highest percentage of international visitors that have their expectations exceeded (68.49%).

Expectations of International Visitors by Gender

Slightly more female international visitors (57.72%) have their expectations exceeded compared to male visitors (56.21%) as shown in Figure 36.

Expectations of International Visitors and Time Spent in the Canterbury Region

Figure 37 shows that 57.37% of visitors who spent 25% of their time in the Canterbury region had their expectations exceeded compared to 58.31% of those who spent 75% of their time in the region. This difference is marginal suggestive of expectations of visitors being exceeded irrespective of the time spent in the region for at least 57% of the sample.

Figure 35: Expectations of Natural Environment by Age Group (Source: ChristchurchNZ)
Percentage of those who thought New Zealands natural environment exceeded their expectations.

Figure 36: Expectations of Natural Environment by Gender (Source: ChristchurchNZ)
Percentage of those who thought New Zealands natural environment exceeded their expectations.
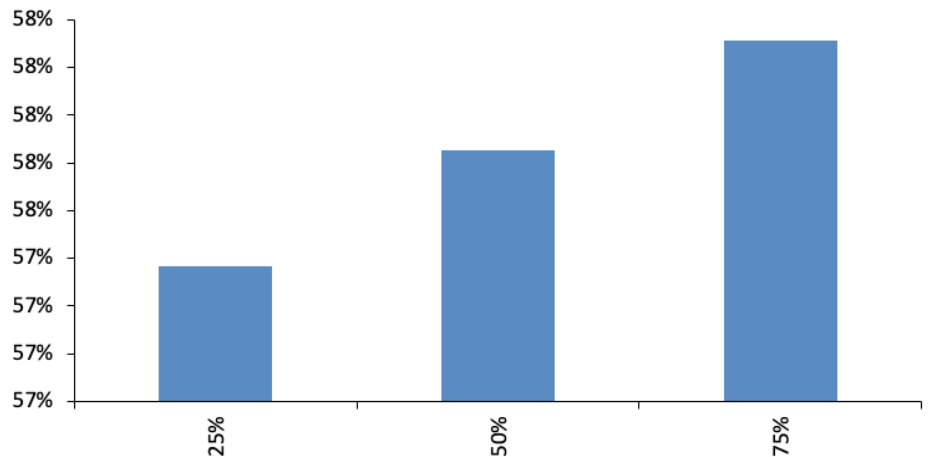
Figure 37: Expectations of Natural Environment by Time Spent in the Canterbury Region (Source: ChristchurchNZ)
Percentage of those who thought New Zealands natural environment exceeded their expectations.

Findings

Expectations of International Visitors and Weighted Spend

Of those international visitors that spend (weighted spend) $1000 on their visit, 56.22% had their expectations exceeded compared to 59.21% of those that spend $10,000 as shown in Figure 38.

Expectations of International Visitors and Overall Satisfaction

In the 1-10 satisfaction scale, the categories 1,2, and 3 were sparsely used by international visitors so data for these categories may not be reliable. In the higher categories, the relationship between expectations and overall satisfaction is a positive one. As Figure xx shows, of those who rated their overall satisfaction relatively high (score of 7), 29.26% had their expectations exceeded compared to 69.39% of those who had the highest overall satisfaction (score of 10).

Environmentalists by Main Socio-Demographics of International Visitors to New Zealand

Lifestyle and the "Environmentalists"

The IVS data also measures international visitors lifestyle with respect to environment with the question "Thinking about your day-to-day lifestyle, which of the following describes your current lifestyle?". In the next set of results, we focus on those international visitors who consider the environment in almost everything they do and they have been named as the "Environmentalists". Figure 40 shows that the percentage of environmentalists has risen consistently from 2015 onwards. From a low of 43.88% in 2015, visitors who consider the environment in everything they do have risen to a high of 52.15% in 2018.

Figure 38: Expectations of Natural Environment by Weighted Spend (Source: ChristchurchNZ)
Percentage of those who thought New Zealands natural environment exceeded their expectations.

Figure 39: Expectations of Natural Environment by Overall Satisfaction (Source: ChristchurchNZ)
Percentage of those who thought New Zealands natural environment exceeded their expectations.
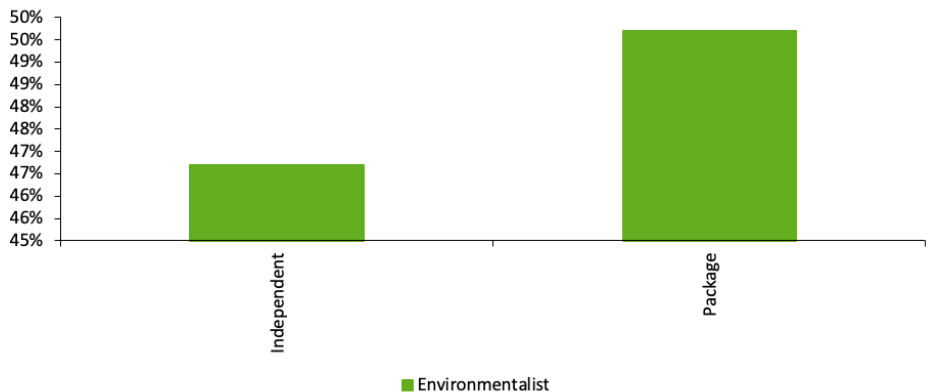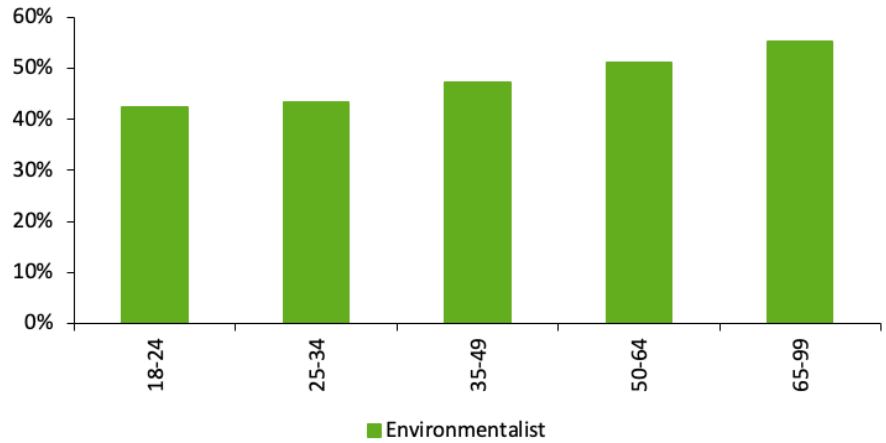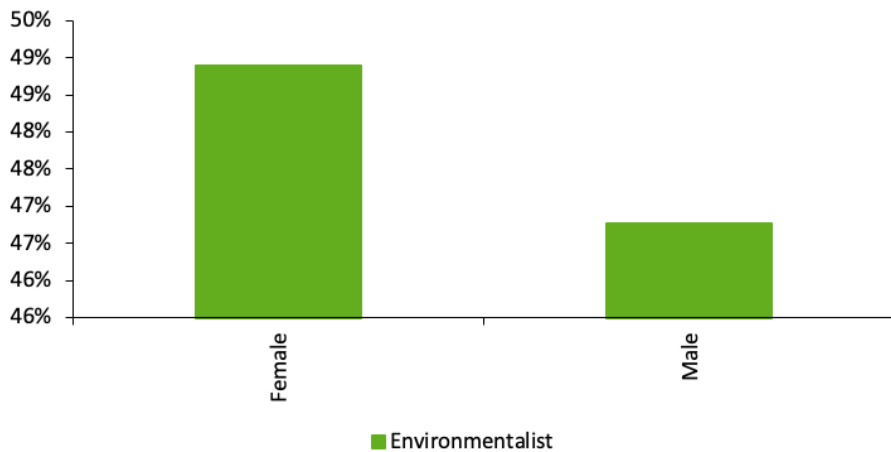
Figure 40: Occurance of Environmentalists by Time
Percentage of those who consider the environment in everything they do

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## Country-of-origin of International Visitors and Environmentalists

Figure 41 shows that from New Zealand's main source markets, visitors from China have the highest percentage of environmentalists (54.65%) while visitors from UK have the lowest (33.80%). Visitors from Germany had a high percentage of environmentalists (53.17%).

Length of Stay of International Visitors and Environmentalists

Of international visitors that stay between 90 days to 1 year, 61.38% can be considered as environmentalists as shown in Figure 42. In contrast, only 48.78% of those who stayed between 1 to 6 days can be considered as environmentalists.

Travel Type and Environmentalists

Figure 43 shows that a higher percentage (49.17%) of visitors travelling on a package tour can be considered as environmentalists in comparison to 46.69% of those travelling independently.
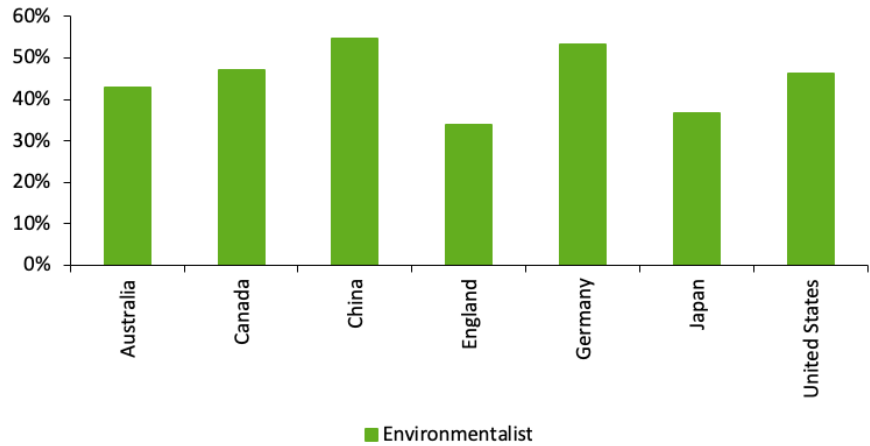
Figure 41: Occurance of Environmentalists by Country of Origin (Source: ChristchurchNZ)
Percentage of those who consider the environment in everything they do
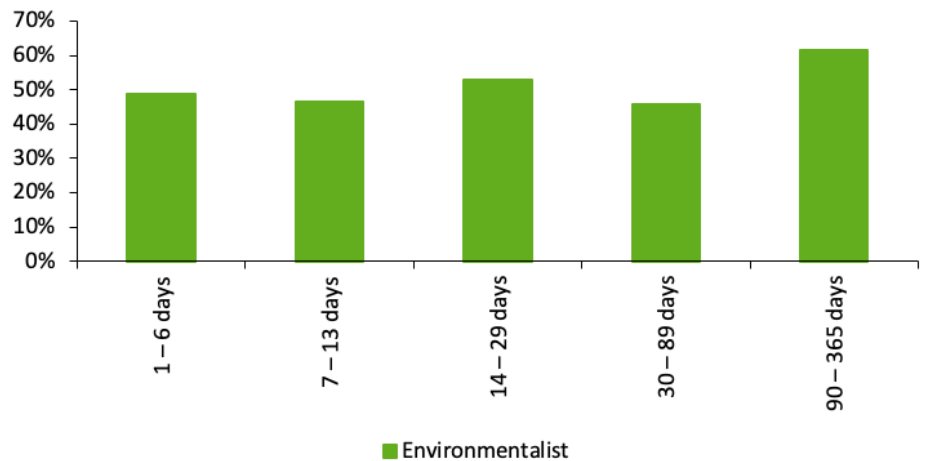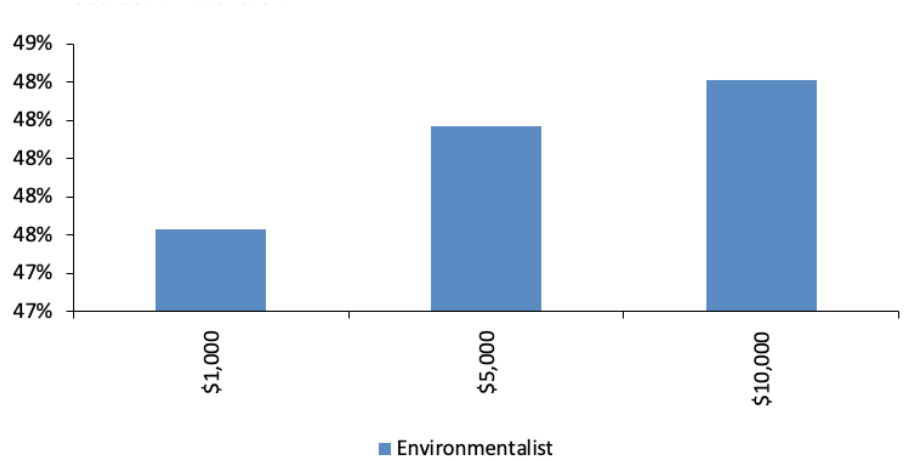

Figure 42: Occurance of Environmentalists by Lenght of Stay (Source: ChristchurchNZ)
Percentage of those who consider the environment in everything they do

Figure 43: Occurance of Environmentalists by Travel Type (Source: ChristchuchNZ)
Percentage of those who consider the environment in everything they do

# Findings

Age Groups and Environmentalists

There is a clear relationship between age groups and the percentage of international visitors that can be considered as environmentalists. As shown in Figure 44, the older the visitors, the higher the percentage of those who can be considered as environmentalists. Of those aged 65 and above, 55.24% can be considered as environmentalists compared to 42.27% of those in the age group 18 to 24 years old.

Gender and Environmentalists

Figure 45 shows that a slightly higher percentage of female visitors (48.9%) can be considered as environmentalists compared to males (46.77%).

Time Spent in the Canterbury Region and Environmentalists

A slightly higher percentage (50.55%) of those spending 75% of their time in the Canterbury region can be considered as environmentalists compared to those who spent 25% of their time in this region (48.41%) as shown in Figure 46.

Figure 44: Occurance of Environmentalists by Age Group (Source: ChristchurchNZ)
Percentage of those who consider the environment in everything they do

Figure 45: Occurance of Environmentalists by Time
Percentage of those who consider the environment in everything they do
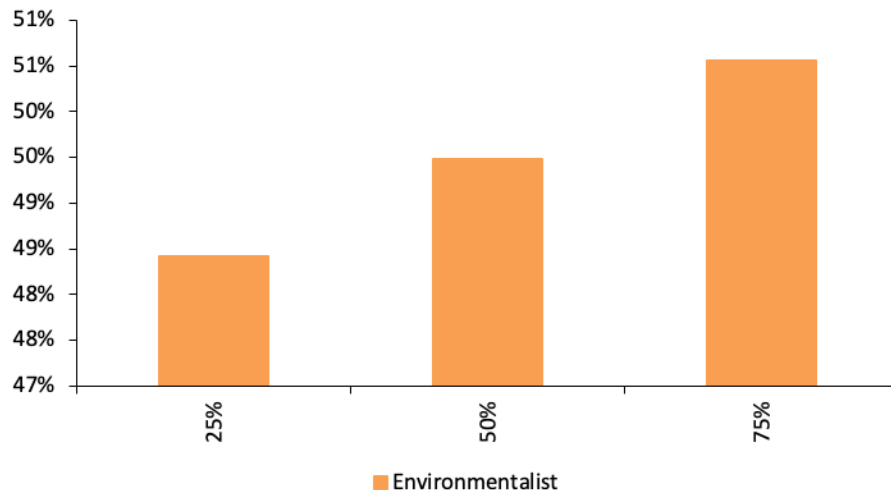
Figure 46: Occurance of Environmentalists by Time Spend in the Canterbury Region (Source: ChristchurchNZ)
Percentage of those who consider the environment in everything they do

Findings

Weighted Spend and Environmentalists

Of those spending $1000, 47.63% can be considered as environmentalists in comparison to 48.41% of those spending $10,000 as shown in Figure 47.

Overall Satisfaction and Environmentalists

Similar to environmental expectations, the relationship between overall satisfaction scores and whether tourists can be considered as environmentalists is positive for those with satisfaction scores 6 and above. However, the relationship with satisfaction for those who scored their satisfaction as 1, 2 and 3 cannot be ascertained as these scores were sparsely used. As shown in Figure 48, 53.08% of those who had the highest overall satisfaction scores can be considered as environmentalists.

Figure 47: Occurance of Environmentalists by Weighted Spend (Source: ChristchurchNZ)
Percentage of those who consider the environment in everything they do
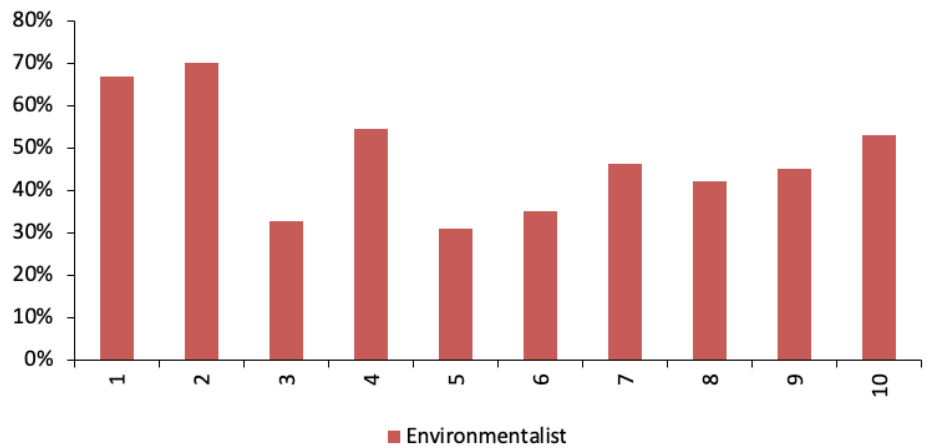
Figure 48: Occurance of Environmentalists by Overall Satisfaction (Source: ChristchurchNZ)
Percentage of those who consider the environment in everything they do
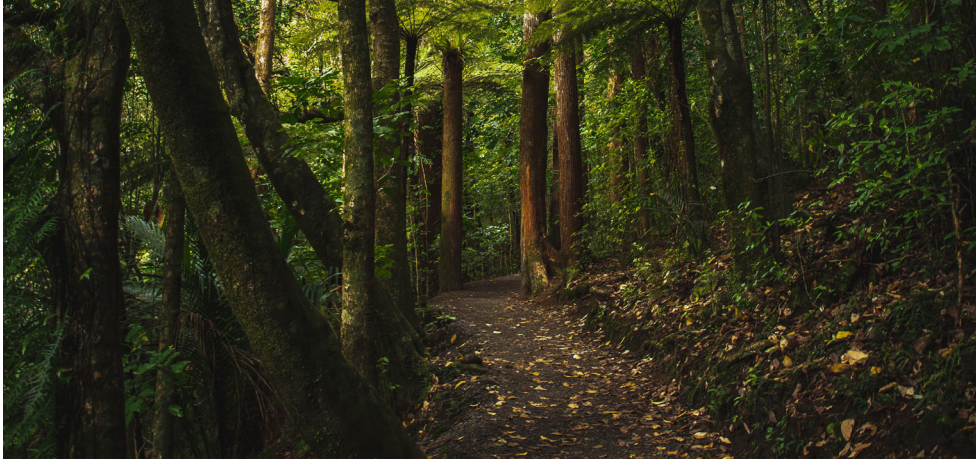
Recommendations

Recommendations to Tourism Industry Aotearoa (TIA) and Tourism Industry New Zealand Trusy (TINZT).

Given that online reviews are generally based on a self-selected audience of international and domestic visitors and the key words used are only a subset of all potential words that tourists may use to talk about sustainability, the following recommendations, based on the analysis of these reviews, should be interpreted with caution. The recommendations based on the analysis of the IVS data are more tenable.

Recommendations based on UGC analysis

Generally, very few international tourists tend to talk about sustainability issues in online reviews.

Personal economic sustainability as indicated by price level charged at a destination remain international tourists most pressing sustainability concern.

• Similar to the current bio-security information dissemination campaign through advertising to New Zealanders and using Air New Zealand in-flight entertainment system, a sustainability awareness campaign to educate tourists, both international and domestic, seem to be critical for raising awareness about sustainability. This could be combined with the Tiaki Promise. Campaign.

The host-guest relationship has certain weak points. As pointed out by the findings, service delivery can be problematic (e.g., booking, check-in) and friendliness of service providers.

• Mapping of customer journeys would be a valuable tool to understand the weak points in service delivery at the individual provider level. This approach can also be used at the destination level to understand the weak points of the destination experience.

Māori culture seems to be under-represented as an attribute of the destination experience. This is particularly evident in the Canterbury region.

• Promotion of local culture and integration of Māori cultural experiences into the broader promotion of both New Zealand and the Canterbury region as destinations is encouraged.

• Raising awareness of Māori history, culture and artefacts can create better perceptions of socio-cultural sustainability.

The positive words associated with nature and wildlife hint toward this aspect of environmental sustainability being perceived positively by international visitors

• For domestic visitors, there seems to be issues with litter on tracks and walks that create a negative perceptions of environmental sustainability.

Food and wine experiences and their relationship to visitors' perceptions of sustainability do not appear as a significant attribute of the New Zealand destination experience in online reviews.

• Better branding and positioning of food and wine experiences and how they showcase aspects of "local" experience could potentially improve visitors' perceptions of sustainability

The Canterbury earthquakes seem to still persist as a strong association with the destination experience provided by the Canterbury region

• The destination experience narrative needs to be revisited in current and forthcoming campaigns marketing the region. The food and wine experience could potentially be used to shift attention away from the Canterbury earthquakes.

Recommendations

The differences in associations of words with New Zealand and the Canterbury region highlight the importance of separate analyses to be undertaken for regions rather than assume that national attributes 'trickle down' to the regions.

Recommendations based on IVS analysis

Efforts by the industry should be directed in these areas:

There are general sustainability perception deficits with transport and commercial accommodation as perceived by international visitors

- The piece-meal approach used to manage the destination experience perhaps underpin why international visitors do not perceive transport as particularly sustainable.
- When tourism stakeholders are entirely left to manage the destination experience, rather than several sectors including transport working together to deliver this experience, such deficits in perceptions by the user are not surprising

Visitors fom Germany are the least impressed with sustainability in New Zealand, whereas Chinese are the most

- It is clear that the clean and green image we market to visitors are fulfilled for the Chinese market but not for the German and other European markets. Awareness of sustainability practices in their own countries could potentially explain these differences.
- Without a clear strategy for understanding and managing sustainability practices of visitors, this deficit in perceptions may be difficult to correct for the German market and other European markets.

Younger tourists tend to have more positive perceptions of sustainability in New Zealand

- Marketing campaigns toward older visitors should include more information on environmental aspects of their trip
- Younger tourists should be encouraged to spread online word of mouth about aspects of their trip to New Zealand that they found to be particularly sustainable.

The data suggests that satisfaction increases with sustainability perception (although we don't have any evidence about the directionality of this relationship; but it would still be prudent to assume that improved perceptions of sustainability lead to more satisfied tourists.

- Certainly the positive relationship between satisfaction and perceptions of sustainability is more pronounced in some markets (e.g., China) compared to others.

High spenders seem to have an increased environmental self-awareness and it may be prudent to target these populations stronger marketing wise

- This would fit in with the 2025 sustainability commitments of increased value rather than volume.

Younger tourists tend to have more positive perceptions of sustainability in New Zealand.
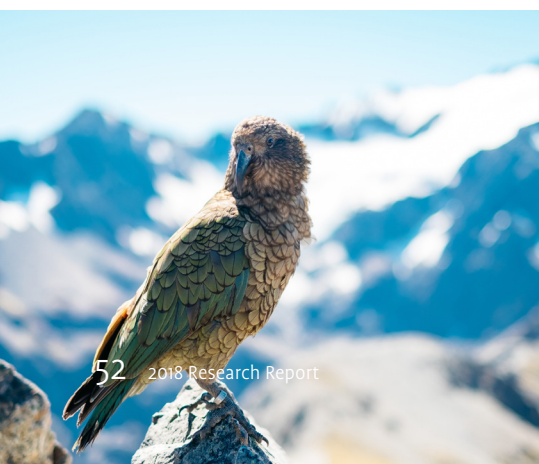
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Tables & Figures

Tables

Figures

UC Business School

College Office
T: +64 3 369 3888
E: buslaw@canterbury.ac.nz

University of Canterbury
Te Whare Wānanga o Waitaha
Private Bag 4800
Christchurch 8140
New Zealand

www.canterbury.ac.nz/business

ChristchurchNZ

T: +64 3 379 5575
E: enquiries@christchurchnz.com

BNZ Centre, Level 3
101 Cashel Street
PO Box 2962
Christchurch 8140
New Zealand

www.christchurchnz.com