

# Interdependency of reef and rainforest tourism – a segmentation analysis of visitors to Tropical North Queensland

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**Australian Government**

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# 1. Introduction

Understanding the drivers of demand for travel should be a key element in any strategy that is directed towards achieving a destination's long term economic sustainability. Changes in the pattern of demand are best understood through analysis of visitor segments, seasonality and how these change over time. The aim of this research is to report on visitor segments in Tropical North Queensland (TNQ) and how these have changed over the period 2007 to 2010.

Cluster analysis may be used to identify naturally occurring groups or clusters in a specific market by using a range of variables such as socio-demographic characteristics (age, gender and nationality) and psychographic factors (travel motivations). Segmenting visitors at the destination level, in this case TNQ, enables tourism firms and marketers to identify the drivers of demand (push factors). If data are collected over time, emerging market segments and subtle changes in existing markets can be identified. For tourism businesses and marketers, segmentation is a valuable tool that can identify the destination's tourism products/features (pull factors) and gauge how successful these have been in attracting the desired target markets. If used effectively, segmentation analyses enable destinations to remain competitive and sustainable in the long term. By adjusting their marketing message, image and branding, destinations can effectively match the attractiveness of the destination (pull factors) with changing tourist motivations (push factors).

Support for visitor monitoring in North Queensland through the Marine and Tropical Sciences Research Facility (MTSRF) over a four-year period has provided a comprehensive data set that can now be used to identify underlying drivers for travel to TNQ. Results of MTSRF supported research confirmed the importance of the Great Barrier Reef (GBR) and the Wet Tropics Rainforests (WTR) as the region's major tourist attractions (McNamara & Prideaux, 2010). The data also indicate that there are significant differences in tourism experiences between first time visitors and repeat visitors. For example, repeat visitors are much less likely to revisit the GBR than the WTR but more likely to visit regional areas including the Atherton Tablelands.

This report employs a two-step cluster analysis to identify visitor segments in TNQ. Visitors were first segmented by travel motivations in step 1, and by socio-demographic characteristics in step 2. The clusters and segments identified in this report provide destination marketers, management authorities and tourism operators with valuable market intelligence. The data can be used to inform decisions regarding the development of infrastructure, destination marketing and the introduction of new tourism products (pull factors) that match visitors' changing motivations (push factors).

## **2. The role of market segmentation**

Segmentation allows researchers to identify specific market sectors that exhibit common characteristics and also assists in the selection of the media used for promotional and marketing activities. Specific markets can be segmented in a number of ways. Segmentation by demographic characteristics including age, gender, nationality and income has been a popular approach successfully used when destinations or businesses in a destination target a specific demographic, e.g. seniors, youth and backpacker markets. Other approaches include geographic, psychological and behavioural (Moscardo et al. 2001). In an example of the latter, Thompson and Prideaux (2010) found that a significant segment of visitors to TNQ were interested in experiencing food and wine. However, segmentation by specific visitor characteristics or motive alone is relatively unsophisticated and the potential exists to develop a more comprehensive view of visitor segmentation by using more advanced techniques such as factor analysis or two-step cluster analysis. Based on its capacity to produce detailed multivariable segments that can be monitored over time, this study adopted the two-step cluster analysis approach.

### **2.1 Purpose of segmentation**

Segmentation enables the identification of subgroups of consumers within a larger population. From a destination perspective, the aims of segmentation are to identify specific subgroups of consumers within a larger market; identify strategies for communicating with the market subgroups; and to maximise the return on investment in marketing by maximising visitor numbers. Segmentation recognises that a range of motives ('push' factors) stimulate an individual to travel to a destination and participate in various activities. To attract these visitor segments, destinations need to understand the push factors that motivate target markets and then develop a range of products, services and experiences that can be used to attract these segments. The basis of the push-pull view of tourism activity is illustrated in Figure 1.

Push factors are those socio-psychological motives that influence individuals to travel and are generally seen as internal to the individual (Usal & Jurowski, 1994). Pull factors are external to the person and originate from a destination. Marketers have identified a large number of push motivations including social interaction, prestige, escape, rest and relaxation, learning and status (Ryan, 2003). The most important pull factors (Usal & Jurowski, 1994) include access to a destination or activity, ability to rest and relax, culture, value for money, cuisine, activities and the quality of the natural environment. The push-pull model provides a useful measure of the motives that attract tourists to a specific destination. The model also provides destinations with a useful inventory of the type of attributes that should be promoted to attract specific tourism segments.

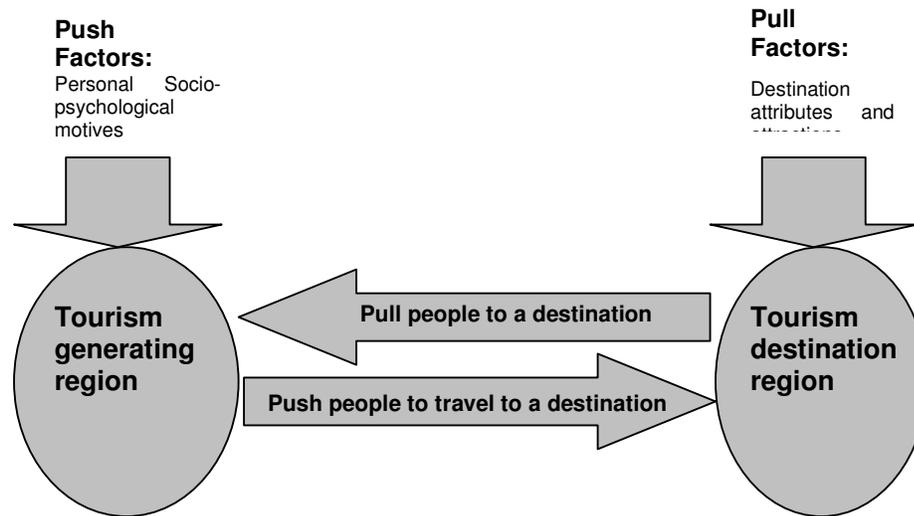


Figure 1: The Destination-Origin Push Pull Model (Source: Prideaux, 2009).

## 2.2 Determining the approach to segmentation

This research uses the two-step cluster analysis approach because it enables segments to be identified from the data rather than being determined by the needs of the researcher or other segmentation users. Guidelines developed by Morrison (1996) to assist segmentation analysis include these points: there must be *homogeneity* within a market segment, segments should be *measurable*, be large enough to be useful in operational terms (*substantive*) and be *accessible* to marketing organisations. Because each segment is unique, it may require a unique mix of marketing strategies. In many cases specific segments may only be interested in some of the products and services offered by a destination (or an organisation). For this reason destinations (and organisations) may need to offer specific variations of their products to attract specific segments. Destinations must also be *compatible* with the demands of specific market segments if they are to be competitive. Finally, the stability of segments over the long term must also be considered (Dolnicar, 2006).

The reported travel motivations of TNQ visitors were used to create initial groups (clusters) of similarly motivated visitors. This was followed by an analysis of selected socio-demographic characteristics of respondents within the three clusters to reveal more sophisticated subgroupings of respondents.

### **3. Research purpose, aim and objectives**

#### **3.1 Research purpose**

The requirement for this research arose from a need to identify and describe specific visitor segments which may then be used by regional marketing organisations, management agencies, and tourism industry operators. For regional marketing organisations, segmentation provides insights into market demand and changes in demand that can be used to develop destination marketing and branding strategies. Management agencies can use the segmented data to inform interpretative policies and assess the need for site infrastructure and visitor facilities. For tourism operators, segmentation is a valuable tool for understanding the market segments that the destination currently attracts and may enable the identification of new target segments.

The aim of this research is to identify specific visitor segments in TNQ and changes in these segments over the four years of the research. Changes are best understood through analysis of visitor segments, seasonality and patterns of demand. Key research objectives were to:

- (i) Evaluate the interdependency of the GBR, the WTR and other sights in attracting visitors to North Queensland
- (ii) Understand drivers of first time and repeat visitors for visiting the GBR and the WTR with specific emphasis on seasonality segmentation
- (iii) Identify specific destination level segmentation/segments
- (iv) Identify changes and trends in destination level segments over time.

#### **3.2 Methodology**

An analysis of market trends was undertaken based on data collection between January 2007 and August 2010. A convenience sampling approach was used to distribute self-completion style questionnaires to holiday visitors departing Cairns via the domestic terminal of the Cairns International Airport. A total of 3808 valid surveys were collected and analysed using a two-step cluster analysis.

Information collected in the surveys included visitors' socio-demographic characteristics, travel behaviour and motivations, activities participated in, alternative destinations considered, reef and rainforest tourism experiences, recommendations and satisfaction. Responses were collected through a mix of closed, Likert-scale and open-ended questions. Items included in the survey were developed through extensive discussion with stakeholders, including representatives from the Wet Tropics Management Authority (WTMA), the Association of Marine Park Tourism Operators (AMPTO), the Great Barrier Reef Marine Park Authority (GBRMPA), individual operators and Tropical Tourism North Queensland (TTNQ). Following discussions with relevant stakeholders, 19 psychographic and activity specific travel motives were identified. The motives selected were:

- Visit the Great Barrier Reef
- Visit the Wet Tropics rainforest
- See Australian wildlife
- Experience Aboriginal culture
- Climate
- The price matched my budget
- Experience the natural environment
- Rest and relax
- Snorkelling and diving
- Spend time with my family
- Meet new people
- Visit the beaches

- Taste tropical fruits
- Visit friends and relatives
- Experience the outback
- Go shopping
- Visit the islands
- Adventure activities
- Business/conference/meeting

Respondents were asked to rate the importance of each item on a Likert scale of 1–5, where 1 indicated that the motivation was not very important and 5 indicated that it was very important.

A two-step cluster analysis was used to identify segments within the data set. The advantage of this technique is that it identifies natural groupings (or clusters) that would not otherwise be apparent. The procedure automatically determines the optimal number of solutions that best describe natural groups within the data set. It also creates clusters based on both categorical and continuous variables, including rating scales (e.g. 'how important are the following?'). The initial clusters that were created in Step 1 allow for comparisons across a range of variables, including socio-demographic characteristics, travel behaviour, reef and rainforest activities and satisfaction. In Step 2 each cluster was further analysed by selected socio-demographic variables (country of origin, age group, travel party and first/repeat visit).

### **3.3 Study limitations**

This study had several limitations. Firstly, a convenience sampling approach limits the ability of the sample to be generalised over the whole population of visitors. As the survey was distributed at the domestic terminal of Cairns International Airport, the views of visitors departing via the international terminal, or via rail and road (coach/car/caravan) are not included. Non-English speaking tourists are under-represented as the survey was only distributed in English. This group of excluded visitors may include Japanese, Chinese and some Europeans. Domestic visitors, who constitute one third of the final sample, are also under-represented.

The data collected in this research was specifically designed to track changes in motives and test a range of other aspects of visitor behaviour in TNQ. The segments developed in Section 4 of this report are specific to TNQ and may not parallel segments that may be identified for visitors to other regions or to specific geographic locations such as Brisbane, Sydney and Melbourne.

The study was not designed to identify changes in visitor patterns such as visitor numbers to the region. Data of this nature are compiled by Tourism Australia through its National Visitors Survey and International Visitor Survey series.

## 4. Results

### 4.1 Overview of visitors to Cairns

To gain a better understanding of the sample, an overview of the visitors surveyed is presented, which includes socio-demographic characteristics, travel behaviours, motivations and reef and rainforest experiences.

#### Socio-demographic characteristics

The sample consisted of slightly more females (55%) than males (45%), with one-third (31.7%) aged 20–29 years, 18.8% aged 30–39 years and 14.7% aged between 50–59 years (Figure 2). The majority of the sample (78.1%) was aged between 20 and 60 years, which also represents the four largest age groups.

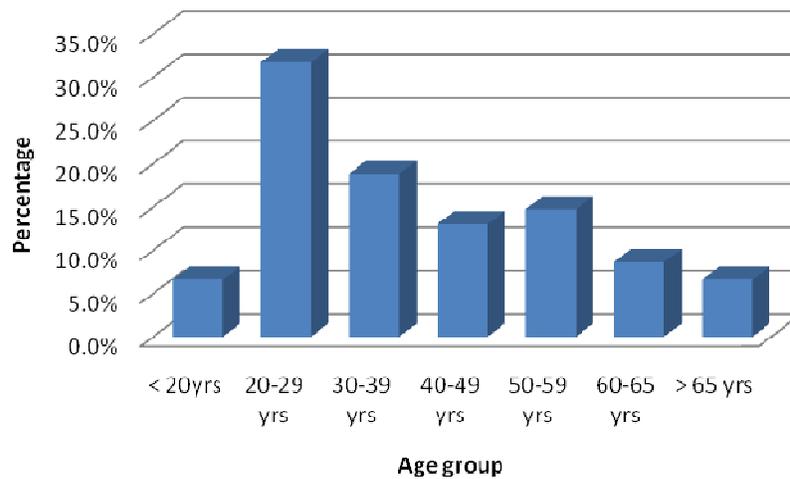


Figure 2: Age group of respondents (n = 3697).

Nearly two-thirds of respondents were international tourists (62%), most of them coming from the UK and Ireland (21.6%), with another 13.7% from North America (see Figure 3). Combined, the European (8.7%) and German (7.2%) markets represent 15.9% of the sample, but have been listed separately as the German market is a key target market for the TNQ region.

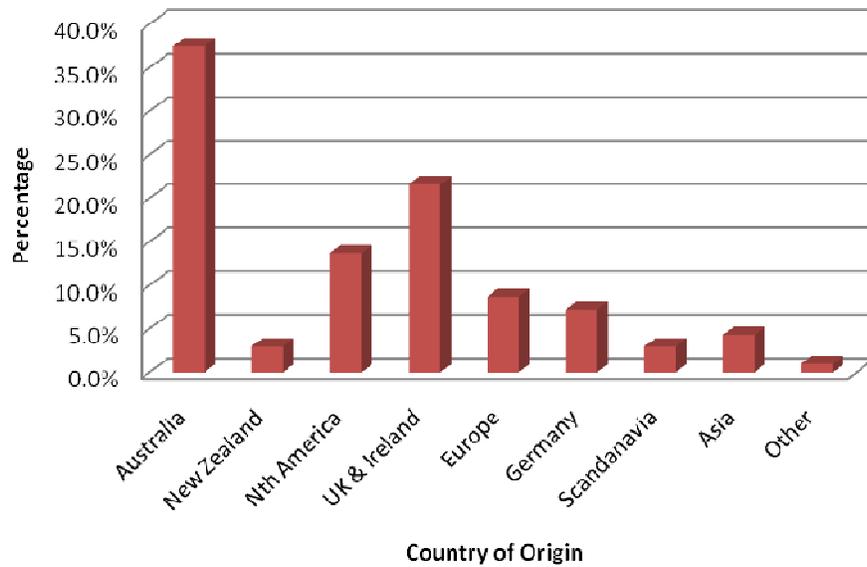


Figure 3: Origin of international respondents (n = 3743).

A quarter of respondents were professionals, 19% were students and 11% were semi/retired (Figure 4). When asked about their levels of education, 44.7% reported having a degree qualification, followed by 21.2% who had completed secondary education and 18.6% who held a diploma (Figure 5).

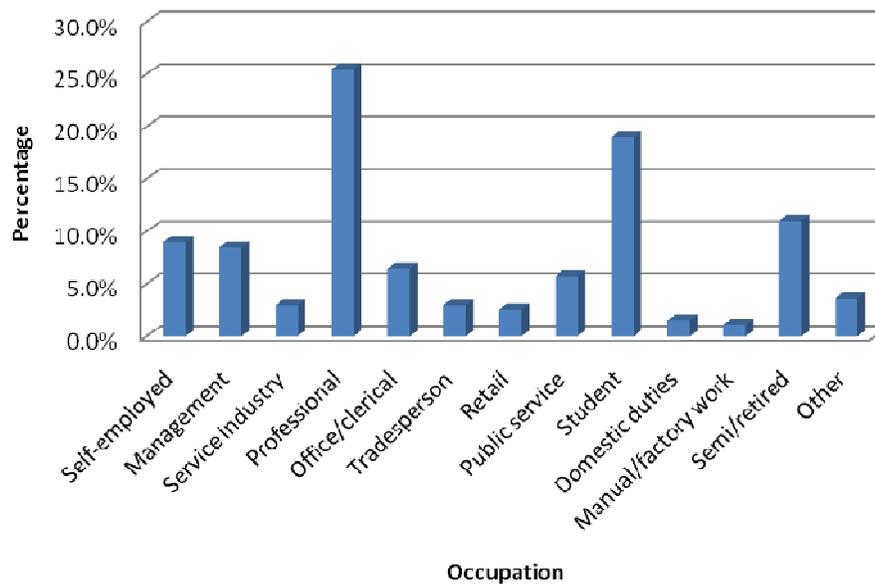


Figure 4: Occupation of respondents (n = 3777).

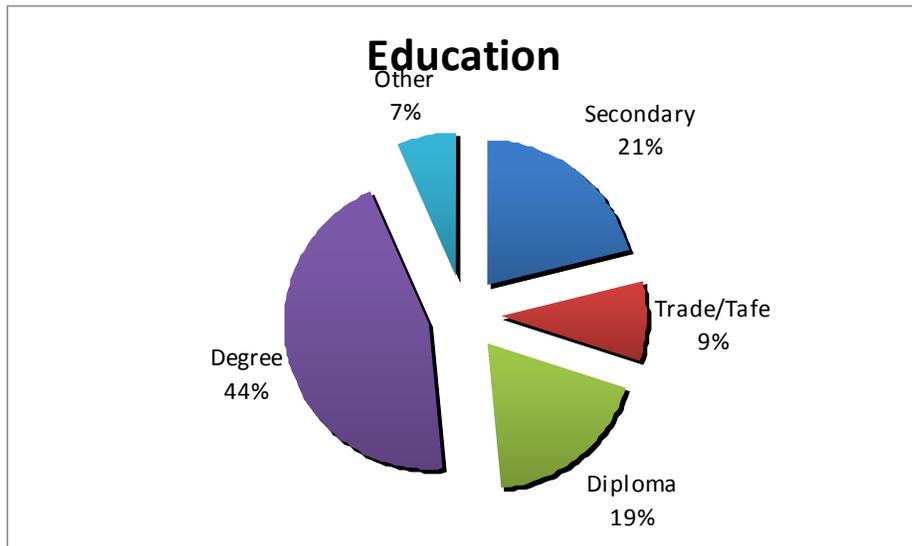


Figure 5: Level of education of respondents (n = 2603).

Most respondents were visiting TNQ for the first time (68%) (Figure 6) while the remaining one-third (32%) were repeat visitors. Visitation figures closely correspond with the origin of visitors, in which 63% were international visitors and 37% domestic visitors. Chi-square analysis resulted in a highly significant difference between the two variables, with 86% of international tourists visiting the region for the first time compared to 37% of domestic tourists who were first-time visitors,  $\chi^2$  (DF = 1, n =

3740) = 943.109,  $p < .01$ .

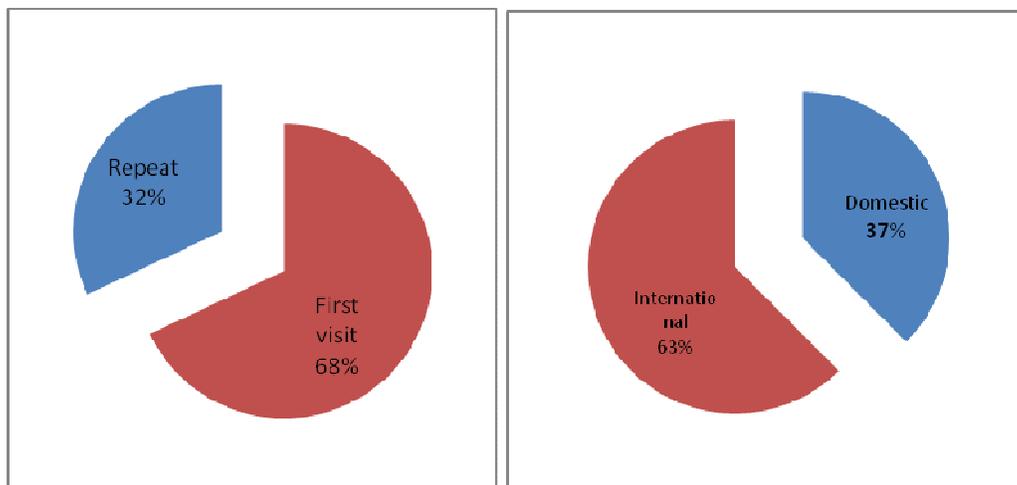


Figure 6: Comparison of first/repeat visitation and visitor origin (n = 3740).

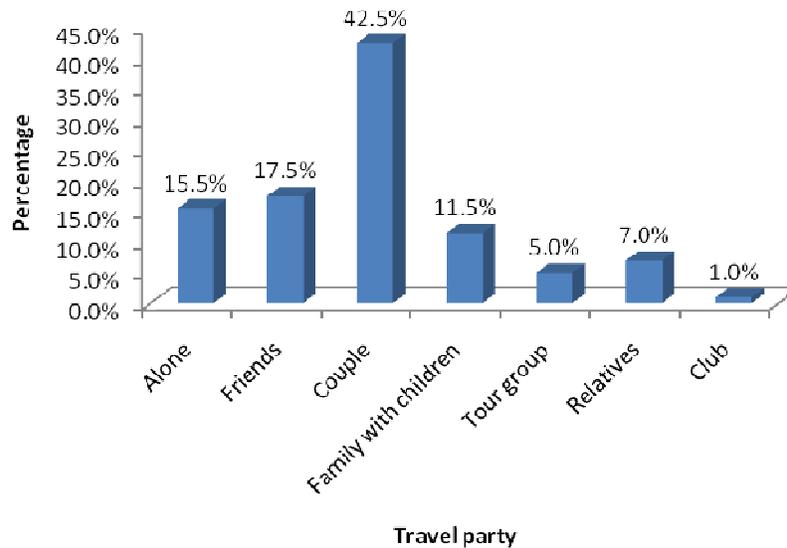
## Trip planning and behaviour

When asked where they found information on TNQ, respondents indicated that friends and relatives (42.7%), the Internet (32.7%) and guidebooks (31.6%) were the top three information sources (Table 1). Information from travel agents was also important and used by 22.1% of respondents, with a further 19.5% relying on knowledge gained from a previous visit.

**Table 1:** Popular sources of information (n = 3808)

Information Sources			
Friends & relatives	42.7%	TV documentary	8.4%
Internet	32.7%	Visitor centres	5.2%
Guidebook	31.6%	Print advertising	4.3%
Travel agent	22.1%	TV/Radio advertising	2.5%
Been before	19.5%	Other	5.9%

When asked about their travel party composition, 42.5% of respondents reported travelling as a couple followed by friends (17.5%) or alone (15.5%). Families with children made up 11.5%, while a further 7% were travelling with relatives (Figure 7).



**Figure 7:** Travel party composition of respondents (n = 3786).

Visitors used four main types of accommodation (Figure 8). Approximately one third (31%) stayed in a hotel/motel, while 21% chose backpackers accommodation. Holiday apartments/units and resorts were also popular, attracting 18% and 16% of respondents respectively.

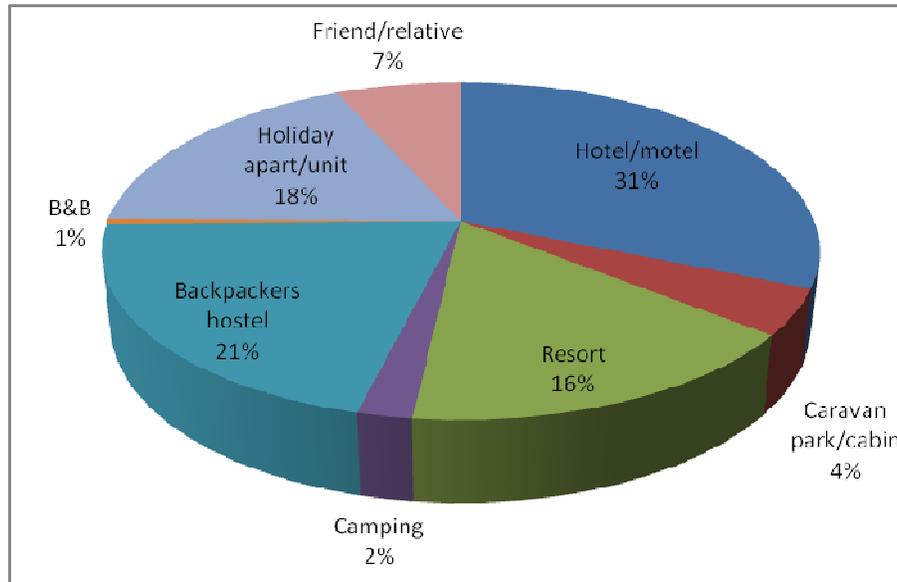


Figure 8: Main types of accommodation (n = 3742).

### Tourist motivations

Understanding the travel motivations (push factors) of visitors was an important element of this research. Respondents were asked to rank how important the following features were in their decision to visit TNQ. A 5-point Likert scale, from *Not at all Important (1)* to *Very Important (5)* was used. Table 2 shows the mean rankings from most important to least important. The top five features for the overall sample were: to visit the GBR; rest and relax; visit the rainforest; experience the natural environment; and see Australian wildlife. This finding confirms the complementary role of the GBR and the WTR as the primary drivers for visiting the region.

Table 2: Mean rank of travel motivations

Rank	Motives (n = 3808)	Mean Rank	Std. Devn
1	Visit GBR	4.27	1.118
2	Rest & relax	3.97	1.030
3	Visit rainforest	3.90	1.082
4	Experience natural environment	3.85	0.968
5	See Australian wildlife	3.80	1.087
6	Climate	3.75	1.040
7	Snorkelling & diving	3.73	1.320
8	Visit beaches	3.53	1.099

9	Price matched my budget	3.39	1.099
10	Adventure activities	3.25	1.209
11	Visit islands	3.23	1.193
12	Spend time with my family	3.16	1.550
13	Experience Aboriginal culture	3.05	1.145
14	Meet new people	3.02	1.196
15	Taste tropical fruits	2.97	1.132
16	Experience the outback	2.85	1.295
17	Go shopping	2.51	1.200
18	Visit friends & relatives	2.46	1.458
19	Business/conference/meetings	1.65	1.111

### Dispersal around TNQ

Visitors use Cairns as a hub to visit other places in the region. Port Douglas was the most popular location (43.5%), followed by Kuranda (36.4%), Daintree (36.0%) and Cape Tribulation (28.9%) (Table 3). As the distance between Cairns and regional locations increases, the rate of visitation decreases. About 20% of respondents ventured further west, visiting Atherton (22.2%) and Mareeba (21.1%), and south to Mission Beach (18.8%) and Innisfail (14.3%).

Table 3: Locations visited by respondents

Locations visited	%*	freq	<i>n</i>
Port Douglas	43.5%	1630	3751
Kuranda	36.4%	1367	3751
Daintree	36.0%	937	2601
Cape Tribulation	28.9%	752	2602
Atherton	22.2%	832	3750
Mareeba	21.1%	791	3751
Mission Beach	18.8%	704	3751
Innisfail	14.3%	536	3751
Millaa Millaa	13.5%	511	3789
Malanda	11.3%	429	3788
Yungaburra	9.5%	359	3789
Cooktown	6.4%	169	2640
Ravenshoe	4.3%	162	3789
Undara	3.4%	89	2640

\*Does not equal 100% as multiple responses recorded.

Note that *n* values for Cooktown, Undara, Cape Tribulation and Daintree are lower than the remainder of the sample because these destinations were added in 2008.

## Reef and rainforest experiences in TNQ

To gain a deeper understanding of the importance of the GBR and the WTR as primary motivations for visiting the region, and to allow comparisons to be made with other visitor motivations, data were collected detailing visitors' reef and rainforest experiences. Of the sample, 75.5% (2743) visited the WTR during this trip, and of these visitors, 47% (1289) indicated that it was their first visit. Table 4 shows visitation to popular rainforest locations, including west to Kuranda (50.0%), north to the Daintree (37.0%), Mossman Gorge (32.8%) and Cape Tribulation (32.1%), further west to the Atherton Tablelands (19.8%) and south to Mission Beach (13.7%).

**Table 4:** Visitation to the Wet Tropics Rainforest

<b>Rainforest Locations</b>	<b>%*</b>	<b>freq</b>	<b>n</b>
Kuranda	50.0%	1848	3703
Daintree	37.0%	1398	3781
Mossman Gorge	32.8%	1226	3740
Cape Tribulation	32.1%	1213	3781
Atherton Tablelands	19.8%	739	3740
Mission Beach	13.7%	519	3781
Lakes area	12.7%	330	2591
Waterfalls circuit	12.5%	326	2602
Innisfail	9.6%	358	3740
Misty Mountain Trails	6.9%	182	2632
Paluma	6.0%	225	3781

Notes 1. \*Does not equal 100% as multiple responses recorded.

Please note that *n* values for Misty Mountain Trails, Waterfalls Circuit and the Lakes are lower than the remainder of the sample because these destinations were added in 2008.

Most respondents (60.8%) enjoyed walking through the rainforest, viewing the wildlife (48.0%) and the scenery (45.6%), taking pictures/film (43.5%) and generally relaxing in the rainforest (41.1%). About one third of the sample participated in a guided tour (34.8%).

**Table 5:** Popularity of rainforest activities.

<b>Rainforest activities</b>	<b>%*</b>	<b>Freq</b>	<b>n</b>
Walking	60.8%	1605	2639
Viewing wildlife	48.0%	1267	2639
Viewing scenery	45.6%	1203	2639
Film/photography	43.5%	1147	2639
General relaxation	41.1%	1085	2639
Guided tour	34.8%	919	2639
Swimming	32.5%	839	2583

Socialization	24.9%	658	2639
Hiking	24.7%	652	2639
Visit Visitor Information Centres (VICs)	24.7%	653	2639
Bird watching	15.7%	406	2853
Reading site interpretation	15.3%	394	2583
Rafting	14.5%	383	2638
4WD	10.5%	276	2639
Bike riding	7.8%	202	2583
Camping	7.7%	199	2583

\*Does not equal 100% as multiple responses recorded.

Over three quarters (75.4%,  $n = 2740$ ) of the sample visited the GBR during their TNQ trip, and for 53% (or 1454) it was for the first time. Just under half (46%) of the sample departed from Cairns for a reef trip, followed by 21% departing from Port Douglas and a further 10% from Airlie Beach.

The most popular reef activities were snorkelling (58.5%), swimming (48.5%) and viewing marine animals (30.4%) (Table 6). A quarter of the sample participated in glass bottom boat tours, and another 20% in certified scuba diving. Interestingly, helicopter flights were taken by 13% of respondents.

Table 6: Popularity of reef activities.

Reef Activities	%*	freq	N
Snorkelling	58.5%	1542	2631
Swimming	48.5%	1275	2631
Viewing marine animals	30.4%	801	2631
Glass bottom boat/semi-sub coral viewing	25.7%	675	2631
Sailing	23.0%	604	2631
Certified scuba diving	20.5%	540	2631
Visiting the islands	18.6%	489	2631
Helicopter flight	12.8%	336	2631
Resort/uncertified scuba diving	9.0%	237	2631
Marine biologist tour	8.7%	230	2631
Overnight cruise	6.9%	182	2631
Diver training course	6.6%	174	2631

\*Does not equal 100% as multiple responses were allowed.

Where respondents did not visit the reef or rainforest during their trip, 'no time' was the most frequently cited reason in 12.5% and 20% of cases respectively (Table 7). 'No interest' (5.5%) and 'been before' (4.5%) were also cited as reasons for not visiting the rainforest. In comparison, reasons for not visiting the reef included 'been before' (8.5%) and 'no money' (5%).

Table 7: Reasons for not visiting the WTR and GBR.

<b>Top 3 reasons for not visiting the ...</b>					
<b>WTR</b>		<b>n=3757</b>	<b>GBR</b>		<b>n=3759</b>
1	No time	20.0%	1	No time	12.5%
2	No interest	5.5%	2	Been before	8.5%
3	Been before	4.5%	3	No money	5.0%

### **Recommendations and trip satisfaction**

An overwhelming 96.5% of respondents indicated they would recommend TNQ to prospective visitors. When asked about the overall quality of their visit to the TNQ region, 84% ranked it 8 or higher on a Likert-scale of 1–10, where 1 is not satisfactory and 10 is highly satisfactory.

## 4.2 Segmentation analysis

Following the methodology adopted by Moscardo et al. (2001), a two-step cluster analysis was carried out, using psychographic factors for step one and socio-demographic characteristics for step two. The psychographic factors used in this analysis were travel motivations. Step two was undertaken using four key socio-demographic characteristics: country of origin, age group, travel party and first/repeat visit. The cluster analysis was followed by an examination of trends within the longitudinal data set, identifying changes within the clusters over the survey period (reported in Section 4.3).

In the following discussion, groups identified through the analysis of travel motivations in step one are referred to as clusters (first-step groupings), and groups identified in step two are referred to as segments (second-step groupings).

It should be noted that the clusters and segments identified in this research are specific to visitors to TNQ and derived directly from visitor socio-demographic characteristics and motives for visiting the TNQ region. For these reasons, the data may not match visitor segments that are based on larger groupings of visitors, such as visitors to Queensland or Australia.

### Step 1: Identifying clusters using travel motivations

Based on the responses given to 19 travel motivations, three clusters were identified. Figure 9 shows the rankings given to the 19 travel motivations by each cluster. Although some similarities were identified between the clusters, particularly clusters 2 and 3, there are also some significant differences. Cluster 1 is markedly different from the other two clusters. For the purposes of this research the clusters have been named according to defining characteristics, and will be referred to accordingly:

<i>Cluster 1</i>	<i>Rest &amp; relax cluster/market</i>
<i>Cluster 2</i>	<i>Nature &amp; activity cluster/market</i>
<i>Cluster 3</i>	<i>Nature &amp; relax cluster/market</i>

The rest and relax cluster, the smallest of the three, represented 14% of the sample and had consistently lower mean rankings for the majority of the 19 motivations. The exceptions were 'spending time with my family', 'going shopping', 'visiting friends and relatives', and 'businesses/conference/meetings'. The rest and relax cluster ranked higher across these four motives than the nature and activity cluster, but lower than the nature and relax cluster. Representing 45% of the sample and the largest of the cluster groups, the nature and relax cluster consistently had the highest ranked means across the 19 motivations. Only two motivations were ranked higher by the nature and activity cluster: visiting the GBR; and snorkelling and diving. Further analysis of the nature and activity cluster (41% of the sample) revealed an almost equal mean rank with the rest and relax cluster for the rest and relaxation motive.

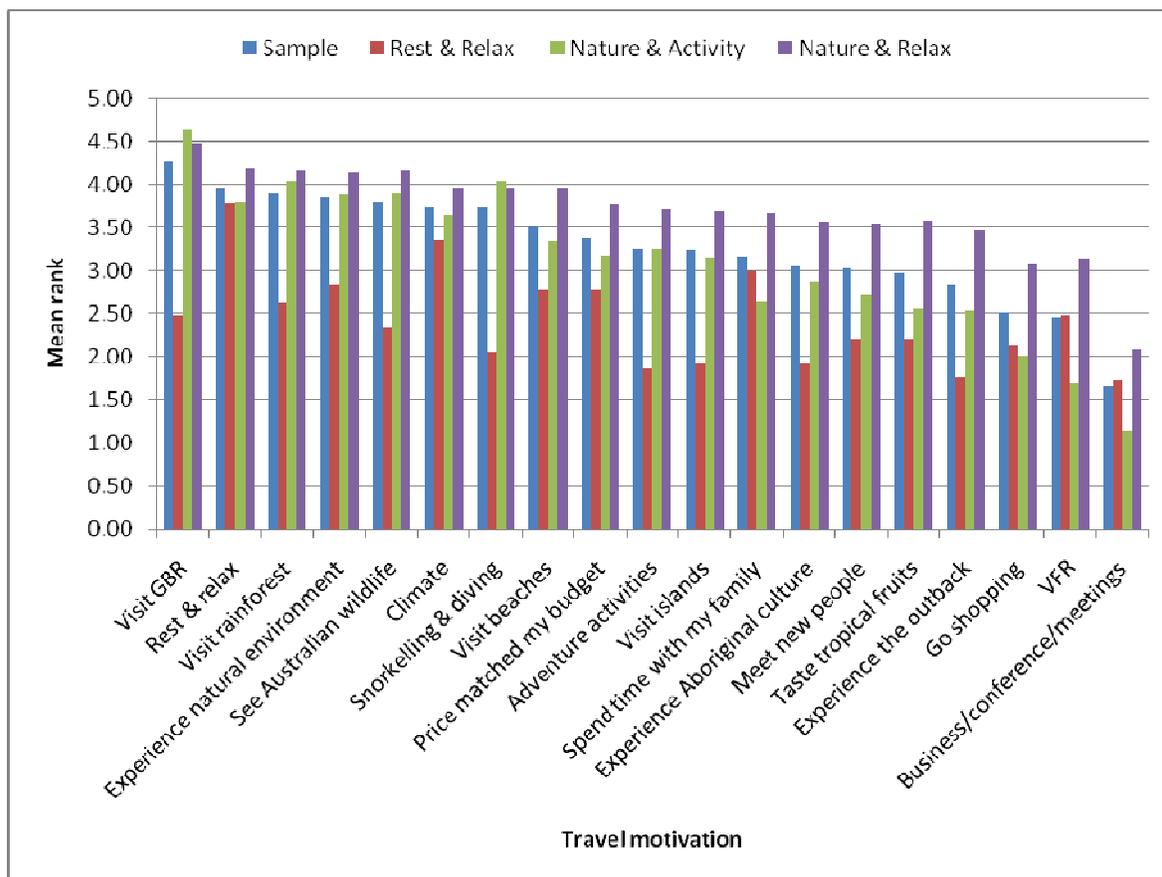


Figure 9: Comparing the mean rank of travel motivations for the sample and by cluster.

Table 8 lists the five most important destination motivations for each cluster. From this table, distinct differences between the clusters become more apparent, and these characteristics have assisted in naming the clusters. Rest and relaxation is the most important feature of travelling to Cairns for the rest and relax cluster, with an emphasis on climate and the natural environment, family and budgetary considerations.

For both nature clusters, visiting the GBR had the highest mean rank of the 19 motives. Similarities also exist with the following motives all of which ranked in the top 5: visiting the rainforest, seeing Australian wildlife and experiencing the natural environment. Although similar in their desire to experience nature, the activity and relax clusters differ on the importance of snorkelling and diving and rest and relaxation. Participating in reef activities such as snorkelling and diving is more important for the nature and activity cluster than for the nature and relax cluster, which placed a higher value on rest and relaxation.

Considering the motivational differences (push factors) between the three clusters is important when targeting these markets with complementary/matching destination attributes (pull factors), such as adventure activities, rest and relaxation or indulgence experiences. While the two nature-based clusters appear to be very similar across a number of motives, the importance of rest and relaxation is a significant *point of difference* between these clusters and indicates an opportunity for differentiated marketing.

Table 8: Top 5 travel motivations by cluster

Top 5 Motives	Rest & Relax (n=535)	Nature & Activity (n=1545)	Nature & Relax (n=1728)

1	Rest & relaxation	Visit the GBR	Visit the GBR
	3.79	4.64	4.48
2	Climate	Snorkelling & diving	Rest & relaxation
	3.36	4.04	4.17
3	Spend time with my family	Visit the rainforest	Visit the rainforest
	2.99	4.04	4.16
4	Experience the natural environment	See Australian wildlife	See Australian wildlife
	2.84	3.90	4.16
5	Price matched my budget	Experience the natural environment	Experience the natural environment
	2.77	3.88	4.14

### Summary of cluster characteristics

A series of cross tabulations were conducted to understand the motivational differences between the clusters and identify general visitor trends within each one. A range of variables, including socio-demographic, trip behaviour and experiential variables, were compared. Table 9 provides an overview of the trends identified for each cluster. It is worth noting that some of the characteristics represent relatively small groups, particularly the rest and relax cluster.

Table 9: Overview of clusters.

<b>SAMPLE (n=3808)</b>	<b>Rest &amp; Relax 14% (n=535)</b>		<b>Nature &amp; Activity 41% (n=1545)</b>		<b>Nature &amp; Relax 45% (n=1728)</b>	
<b>SOCIO-DEMOGRAPHICS</b>						
Gender	50%	Male	48%	Male	40%	Male
	50%	Female	52%	Female	60%	Female
Age	30%	<29yrs	40%	<29yrs	39%	<29yrs
	50%	30-59yrs	45%	30-59yrs	46%	30-59yrs
	20%	60+yrs	15%	60+yrs	15%	60+yrs
Origin	73%	Domestic	30%	Domestic	33%	Domestic
	27%	International	70%	International	67%	International
Occupation	24%	Professional	27%	Professional	24%	Professional
	15%	Retired	21%	Student	20%	Student
	14%	Self-employed	10%	Retired	10%	Retired
	10%	Student	9%	Mgt	9%	Self-employed
	8%	Mgt	7%	Self-employed	8%	Mgt
Education	37%	Degree	52%	Degree	41%	Degree
	27%	Secondary	18%	Secondary	22%	Secondary
	17%	Diploma	16%	Diploma	21%	Diploma

<b>TRIP BEHAVIOUR</b>							
First/repeat visit	66%	Repeat First	78%	First Repeat	70%	First Repeat	34%
Travel party	46%	Couple	47%	Couple	37%	Couple	23%
	23%	Alone	17%	Friends	20%	Friends	12%
	12%	Friends	15%	Alone	15%	Alone	7%
	7%	Families + kids	11%	Families + kids	13%	Families + kids	
Accommodation	27%	Hotel/motel	32%	Hotel/motel	32%	Hotel/motel	24%
	24%	Apart/unit	25%	Backpackers	21%	Backpackers	19%
	19%	Resort	18%	Apart/unit	17%	Apart/unit	16%
	16%	Friends/rels	17%	Resort	15%	Resort	9%
	9%	Backpackers	2%	Friends/rels	8%	Friends/rels	
Information sources	38%	Been before	43%	Friends/rels	45%	Friends/rels	35%
	35%	Friends/rels	40%	Guidebook	32%	Internet	23%
	23%	Internet	37%	Internet	30%	Guidebook	15%
	15%	Guidebook	25%	Travel agent	22%	Travel agent	12%
	12%	Travel agent	15%	Been before	18%	Been before	
<b>DISPERSAL</b>							
	39%	Port Douglas	45%	Port Douglas	44%	Port Douglas	32%
	32%	Kuranda	40%	Daintree	40%	Kuranda	29%
	29%	Mareeba	35%	Kuranda	38%	Daintree	28%
	28%	Atherton	34%	Cape Trib	29%	Cape Trib	20%
	20%	Daintree	19%	Atherton	24%	Atherton	16%
	16%	Cape Trib	18%	Mission Beach	22%	Mareeba	14%
	14%	Mission Beach	17%	Mareeba	21%	Mission Beach	
<b>RAINFOREST EXPERIENCE</b>							
Visitation	49%	Visited WTR, Majority – Repeats	78%	Visited WTR, Majority – First time	74%	Visited WTR, Majority – First time	
Locations	71%	Kuranda	63%	Kuranda	71%	Kuranda	
<i>Rest &amp; Relax (n= 260)</i>	44%	Daintree	53%	Daintree	50%	Daintree	
<i>Nature/Activity(n=1208)</i>	41%	Mossman	47%	Cape Trib	44%	Mossman	
<i>Nature/Relax (n=1275)</i>	40%	Atherton	46%	Mossman	43%	Cape Trib	
	36%	Cape Trib	24%	Atherton	27%	Atherton	
Activities	67%	Walking	54%	Walking	61%	Walking	
<i>Rest &amp; Relax (n= 260)</i>	49%	Film/photo	44%	Scenery	50%	See wildlife	
<i>Nature/Activity(n=1208)</i>	46%	Relaxation	44%	See wildlife	44%	Scenery	
<i>Nature/Relax (n=1275)</i>	44%	Scenery	38%	Film/photo	44%	Film/photo	
	39%	See wildlife	35%	Relaxation	43%	Relaxation	
	29%	Socialisation	34%	Guided tour	35%	Guided tour	
	28%	Hiking	29%	Swimming	33%	Swimming	
	26%	Swimming	22%	Visit VIC	27%	Socialisation	
	25%	Guided tour	22%	Hiking	26%	Visit VIC	
	22%	Visit VIC	20%	Socialisation	25%	Hiking	
	18%	Site interp	14%	Site interp	17%	Bird watching	
	15%	Bird watching	12%	Bird watching	14%	Site interp	

<b>REEF EXPERIENCE</b>			
Visitation	30% Visited GBR, Majority – First time	54% Visited GBR, Majority – First time	53% Visited GBR, Majority – First time
Activities	45% Snorkelling	56% Snorkelling	59% Snorkelling
<i>Rest &amp; Relax (n= 161)</i>	43% Swimming	43% Swimming	51% Swimming
<i>Nature/Activity(n=1300)</i>	39% Cert. Scuba	29% Marine animals	30% Marine animals
<i>Nature/Relax (n=1279)</i>	32% Heli- flight	23% GBB/Semi-sub	27% GBB/Semi-sub
	25% Sailing	coral viewing	coral viewing
	24% GBB/Semi-sub	20% Sailing	24% Sailing
	coral viewing	18% Cert. Scuba	20% Visit islands
	24% Marine animals	17% Visit islands	19% Cert. Scuba
	11% Visit islands	10% Uncert. scuba	14% Heli- flight
<b>SATISFACTION</b>			
Scores	8.09 (Std Dev 1.453)	8.44 (Std Dev 1.147)	8.56 (Std Dev 1.218)
Recommendation	93.5% Yes	97.3% Yes	96.7% Yes

#### *Rest and relax cluster*

The rest and relax cluster was characterised by repeat (66%) domestic visitors (73%), who were slightly older and more likely to be professional (24%), retired (15%) or self-employed (14%). The majority travelled as a couple (46%) or alone (23%) and were less likely to be travelling with friends (12%). Visitors in this cluster were more likely to stay in a hotel/motel (27%) or holiday apartment/unit (24%) while in the region. They were also more likely to gain information on TNQ from previous visits (38%), rather than from travel agents (12%) or guide books (15%).

Rest and relax cluster visitors had a greater tendency to travel to regional areas, such as Mareeba (29%) and Atherton (28%), and less so to the Daintree (20%) and Cape Tribulation (20%). As repeat visitors, they will have both the knowledge and time to explore more regional areas, looking for unique experiences. This may also explain why tourists in this cluster were more likely to participate in certified diving and helicopter flights. Visitation to the GBR (30%) and WTR (49%) was generally lower than for the two nature clusters. About half visited the rainforest, enjoying nature walks (67%), photography (49%) and generally relaxing (46%), while one third (30%) visited the GBR.

#### *Nature and activity cluster*

In terms of demographic characteristics, this cluster had slightly more females (52%) than males. Just under half (45%) were aged 30–59 while 40% were under 30 years old. Seventy percent were international visitors and half had a degree. Almost one third (27%) were professionals while 21% were students. The majority were first time visitors (78%) and travelled as a couple (47%) or with friends (17%). Hotels/motels were used by 32% of this segment followed by backpackers (25%). Their main information sources were friends (43%) followed by guidebooks (40%) and the Internet (34%). Port Douglas was the most popular regional destination (45%) for this cluster followed by the Daintree (40%) and Kuranda (35%). Visitation to the WTR (78%) was higher than for the GBR (54%).

#### *Nature and relax cluster*

Members of this cluster were more likely to be females (60%) with under half (46%) in the 30–59 year age group. Most of the other members of this cluster were under 30 years of age (39%). Two-thirds were overseas visitors, with half being students (20%)

or professionals (24%). Over 40% held a degree. Most were first time visitors and they travelled mainly as couples (37%) or with friends (20%). Almost half stayed in either hotel/motels (32%) or backpacker accommodation (21%). Their information sources include friends/relatives (45%), the Internet (32%) and guidebooks (30%). Port Douglas (44%) was the most popular regional area visited by this segment followed by Kuranda (40%) and the Daintree (38%). Three-quarters visited the rainforest while only 53% visited the reef. Overall satisfaction with their trip was very high (mean = 8.56).

The first stage of the two-step cluster analysis used visitors' motivations to provide an overall indication of push factors and general visitor trends. However, it does not provide sufficient information to identify 'who' tourists are within each cluster, particularly the more subtle differences between visitors in the nature clusters. Further segmentation analysis is required to provide a more detailed profile of visitor segments and to assist the destination target these market segments.

## **Step 2: Segmenting clusters using key socio-demographic characteristics**

Each primary cluster can be further divided into specific segments that give a more detailed view than is possible at the cluster level. Detailed knowledge of this type gives destination marketers and firms operating in the destination some discretion over which specific segment/s they wish to target.

In Step 2, the three primary clusters were re-analysed by introducing four non-psychographic variables. The variables selected were country of origin, age group, travel party and first versus repeat visit. These variables best reflect the manner in which many of the destination's products and services are marketed. Examples include the backpacker market (age and nationality), the family market (travel party) and rest and relax tourists (repeat visitors).

Two-step cluster analyses of the primary clusters identified three segments in each cluster (Tables 10–12). Some of the characteristics identified represent relatively small groups, particularly the segments described for the rest and relax cluster.

### *Summary of rest and relax segments*

#### **Segment 1**

Segment 1 (42% of the Rest and Relax cluster) was comprised of older, domestic couples on a repeat visit to the region (Table 10). The majority were aged 40 years and over, half were semi/retired or professionals, and two-thirds had a secondary education or a degree. Visitors from Segment 1 were more likely to stay in holiday apartments/units and hotel/motels while visiting Tropical North Queensland, and sourced their information from previous visits (been before) and friends and relatives. Primary motivations included rest and relaxation, climate, the natural environment and family. Compared with segments 2 and 3, segment 1 visitors were more likely to visit regional areas to the west (Mareeba and Atherton) rather than travel north to the Daintree and Cape Tribulation. These visitors were more likely to visit the rainforest than the reef, but of those who did visit the GBR, almost half went swimming and snorkelling. In the rainforest, walking was the most popular activity, followed by relaxation.

#### **Segment 2**

Segment 2 (27% of the cluster) was characterised by a repeat, domestic market. Visitors tended to be younger, aged up to 50 years, and were travelling alone or as a family with children. They were more likely to have a secondary education and be students, working professionals or self-employed. While segment 2 visitors were more likely to stay with friends and relatives while in the region, their information sources were similar to segment 1: (been before and friends and relatives). The importance of friends and relatives to this segment is reflected in their motivations and may explain why visitation to the WTR and GBR was very low. Due to the small size of this

segment, caution is advised in analysing participation in activities, as the results may not be representative.

### **Segment 3**

Segment 3 (31% of the cluster) represented first-time visitors, from domestic (44%) and international (56%) origins. Major international source markets were the UK and Ireland (17%), Europe including Germany (15%), and North America (11%). The majority of visitors were aged between 20 and 60 years, with a higher number of females represented. Most segment 3 visitors had a degree qualification and more likely to be employed as professionals. Half were travelling as couples and another 19% with friends. These visitors preferred to stay in hotel/motel or backpackers' accommodation and sourced information from friends and relatives, the Internet and guidebooks. They tended to travel to Kuranda or north to Port Douglas, the Daintree and Cape Tribulation. More than half visited the WTR and GBR and, for most it was their first visit. This segment places a greater importance on visiting world heritage areas than the other two segments. In terms of activities, segment 3 was more likely to take a guided tour through the rainforest, while 40% and 33% participated in snorkelling and swimming respectively.

**Table 10:** Profile of rest and relax segments.

<b>Rest &amp; Relax Cluster (n=503)</b>	<b>Segment 1 42% (n=213)</b>		<b>Segment 2 27% (n=136)</b>		<b>Segment 3 31% (n=154)</b>	
<b><i>SOCIO-DEMOGRAPHICS</i></b>						
Gender	49% Male 51% Female		44% Male 56% Female		58% Male 42% Female	
Age	16% 40-49yrs 31% 50-59yrs 14% 60-65yrs 17% >65yrs		14% <20yrs 29% 20-29yrs 24% 30-39yrs 21% 40-49yrs		40% 20-29yrs 20% 30-39yrs 12% 40-49yrs 13% 50-59yrs	
Origin	80% Domestic 20% International 9% NZ 6% UK		95% Domestic 5% International		44% Domestic 56% International 17% UK 15% Europe 11% N.America	
Occupation	26% Retired 24% Professional 15% Self-employed		21% Student 19% Professional 18% Self-employed		29% Professional 12% Management 11% Student	
Education	31% Secondary 30% Degree		41% Secondary 24% Degree		60% Degree 16% Diploma	
<b><i>TRIP BEHAVIOUR</i></b>						
First/repeat visit	100% Repeat		90% Repeat		100% First	
Travel party	76% Couple		49% Alone 24% Families + kids		49% Couple 19% Friends	

Accommodation	27% Apart/unit 26% Hotel/motel	28% Friends/rels =23% Hotel & apart	32% Hotel/motel 22% Backpackers
Information sources	60% Been before 28% Friends/rels 19% Internet	45% Been before 31% Friends/rels 17% Internet	48% Friends/rels 36% Internet 31% Guidebook
<b>MOTIVATIONS</b>			
Top 5 (Mean Rank)	1 Rest & relax 3.88 2 Climate 3.48 3 Family time 3.18 4 Natural env 2.89 5 Visit beaches 2.83	Rest & relax 3.59 Family time 3.24 Climate 3.01 Friends/rels 2.92 Natural env 2.57	Rest & relax 3.79 Climate 3.47 Visit GBR 3.23 Natural env 2.99 Visit rainforest 2.95
<b>DISPERSAL</b>			
	41% Port Douglas 36% Kuranda 35% Mareeba 35% Atherton	35% Port Douglas 30% Mareeba 26% Atherton 23% Kuranda	42% Port Douglas 34% Kuranda 22% Daintree =22% Cape Trib =22% Mareeba
<b>RAINFOREST EXPERIENCE</b>			
Visitation	52% Visited WTR, Majority - Repeats	34% Visited WTR, Majority – Repeats	57% Visited WTR, Majority - First time
Locations	73% Kuranda 53% Atherton 39% Daintree =39% Mossman	83% Kuranda 52% Daintree 50% Mossman =50% Atherton	68% Kuranda 46% Daintree 40% Mossman 34% Cape Trib
Activities	62% Walking 46% Relaxation 40% Film/photo 40% Scenery 37% See wildlife 28% Hiking 26% Socialisation	83% Walking 67% Film/photo 54% Relaxation 46% Scenery 41% See wildlife =41% Hiking =41% Swimming	64% Walking 46% Film/photo 44% Scenery 38% See wildlife 36% Relaxation 27% Swimming 25% Socialisation =25% Guide tour
<b>REEF EXPERIENCE</b>			
Visitation	19% Visited GBR, Majority - Repeats	18% Visited GBR, Majority - Repeats	55% Visited GBR, Majority - First time
Activities	51% Swimming 49% Snorkelling 37% Cert. scubadive 27% GBB/Semi-sub coral viewing 24% Marine animals =24% Heli- flight	56% Cert. scubadive 52% Snorkelling 48% Swimming 32% Heli- flight 20% GBB/Semi-sub coral viewing 12% Marine animals	40% Snorkelling 33% Swimming 28% Heli- flight 26% Cert. scubadive 26% Marine animals 26% GBB/Semi-sub coral viewing

<b>SATISFACTION</b>			
Scores	8.19 (Std Dev 1.411)	8.11 (Std Dev 1.442)	7.89 (Std Dev 1.584)
Recommendation	94.3% Yes	91.1% Yes	94.6% Yes

### *Summary of nature and activity segments*

#### **Segment 4**

Segment 4 was an older market of first-time visitors, most of whom originated from overseas (Table 11). Major international source markets were the UK, Ireland and North America. There was a slightly higher representation of males in this segment, with one-third of visitors employed as professionals and another 14% semi/retired. Over half had a degree qualification and were travelling as couples. Visitors in this segment were more likely to stay in a hotel/motel while visiting the region, and sourced information from friends and relatives, the Internet and guidebooks.

Segment 4 visitors had higher visitation rates to the GBR and WTR than the other two segments, reflecting their travel motivations: to visit GBR and rainforest, see Australian wildlife and go snorkelling and diving. Although 90% of segment 4 visited the GBR, and for the majority of these visitors it was for the first time, comparisons with Segments 5 and 6 show lower participation rates in reef-based activities. A similar result was found in the rainforest data. Although the majority of segment 4 visited the rainforest for the first time, their dispersal and participation in activities differed from patterns identified in segments 5 and 6.

#### **Segment 5**

Segment 5 represented the international, youth market visiting TNQ for the first time. All visitors within this segment were under 30, with two-thirds of international visitors originating from the UK, Ireland and Europe. With a slightly higher representation of females to males, this segment was more likely to consist of students, with a degree education, who travelled as couples and stayed in backpacker accommodation. This segment preferred to source information from guidebooks and friends/relatives.

Visitors in segment 5 were more likely to visit Mission Beach, and less likely to be found in Kuranda than segments 4 and 6. Travel motivations for these visitors placed greater importance on visiting the GBR and snorkelling and diving, which is reflected in a higher level of visitation to the GBR than the rainforest. These visitors were more likely to participate in snorkelling, sailing and certified scuba diving. Segment 5 had the highest visitation rates to the WTR. They were more likely to visit the Daintree and Cape Tribulation, whereas Segment 4 and 6 visitors were more likely to be found in Kuranda. They also had the highest participation in rainforest activities of the three segments, including walking, seeing wildlife, enjoying the scenery, relaxing and photography.

#### **Segment 6**

In contrast to segments 4 and 5, segment 6 comprised repeat, domestic visitors. Although slightly younger in age than segment 4, this segment was characterised by professionals, with a degree qualification, travelling as couples. Their preferences included holiday apartment/unit style accommodation and their knowledge from previous visits. While visiting the GBR and WTR was important to these visitors, so was rest and relaxation. Interestingly, these domestic visitors don't place the same importance on seeing Australian wildlife as international visitors from segments 4 and 5.

Although the majority of segment 6 visitors went to the GBR and WTR, visitation rates were lower than for segments 4 and 5. This finding supports previous research in

which the GBR is perceived as a one-time experience. It is also consistent with the rest and relax segment findings (Table 10), in which visitation to the WTR and GBR in particular was lower amongst repeat visitors to the region. One explanation for this is that most were on a repeat trip, and looking for new experiences, having previously visited the World Heritage Area icons. Although repeat visits to the WTR and GBR were lower, participation in reef and rainforest activities was higher than for visitors from segment 4. The most popular rainforest activities included walking, the scenery and relaxing, while snorkelling, swimming and seeing marine animals were popular reef activities.

**Table 11:** Profile of nature and activity segments.

<b>Nature &amp; Activity Cluster (n=1482)</b>	<b>Segment 4 47% (n=701)</b>		<b>Segment 5 30% (n=451)</b>		<b>Segment 6 22% (n=330)</b>	
<b>SOCIO-DEMOGRAPHICS</b>						
Gender	52% 48%	Male Female	44% 56%	Male Female	48% 52%	Male Female
Age	35% 38% 21%	20-39yrs 40-59yrs 60+yrs	8% 91%	<20yrs 20-29yrs	44% 33% 18%	20-39yrs 40-59yrs 60+yrs
Origin	21% 79%	Domestic International	16% 84%	Domestic International	66% 34%	Domestic International
	26% 23%	UK N.America	33% 30%	UK Europe	14% 10%	UK Europe
Occupation	31% 14%	Professional Semi/retired	43% 22%	Student Professional	27% 14%	Professional Semi/retired
Education	54% 20%	Degree Diploma	55% 21%	Degree Secondary	45% 22%	Degree Secondary
<b>TRIP BEHAVIOUR</b>						
First/repeat visit	100%	First	100%	First	100%	Repeat
Travel party	52% 15%	Couple Families + kids	37% 33% 25%	Couple Friends Alone	52% 15%	Couple Families + kids
Accommodation	41% 19%	Hotel/motel Resort	55% 20%	Backpackers Hotel/motel	29% 26%	Apart/unit Hotel/motel
Information sources	44% 40% 40%	Friends/rels Internet Guidebook	54% 52% 39%	Guidebook Friends/rels Internet	57% 29% 27%	Been before Friends/rels Internet
<b>MOTIVATIONS</b>						
Top 5 (Mean Rank)	1	Visit GBR 4.67	Visit GBR 4.76	Visit GBR 4.76	Visit GBR 4.41	Visit GBR 4.41
	2	Visit rainforest 4.14	Snorkel/dive 4.39	Snorkel/dive 4.39	Rest & relax 4.15	Rest & relax 4.15
	3	Aust. wildlife 4.02	Aust. wildlife 3.94	Aust. wildlife 3.94	Visit rainforest 4.00	Visit rainforest 4.00

4	Snorkel/dive 3.92	Visit rainforest 3.90	Natural env 3.90
5	Natural env 3.90	Natural env 3.85	Snorkel/dive 3.89
<b>DISPERSAL</b>			
	46% Port Douglas 43% Daintree 38% Kuranda 34% Cape Trib	36% Port Douglas 37% Daintree 37% Cape Trib 24% Mission Beach	54% Port Douglas 43% Kuranda 41% Daintree 32% Cape Trib
<b>RAINFOREST EXPERIENCE</b>			
Visitation	86% Visited WTR, Majority - First time	73% Visited WTR, Majority - First time	70% Visited WTR, Majority – Repeats
Locations	69% Kuranda	55% Daintree	70% Kuranda
Segment 4 (n=600)	52% Daintree	55% Cape Trib	57% Daintree
Segment 5 (n=329)	45% Mossman	46% Kuranda	56% Mossman
Segment 6 (n=233)	43% Cape Trib	43% Mossman	50% Cape Trib
Activities	47% Walking	61% Walking	59% Walking
Segment 4 (n=600)	41% Scenery	53% See wildlife	46% Scenery
Segment 5 (n=329)	38% See wildlife	50% Scenery	45% Relaxation
Segment 6 (n=233)	35% Film/photo	39% Relaxation	43% See wildlife
	29% Relaxation	39% Film/photo	39% Film/photo
<b>REEF EXPERIENCE</b>			
Visitation	90% Visited GBR, Majority - First time	87% Visited GBR, Majority - First time	68% Visited GBR, Majority - Repeats
Activities	46% Snorkelling	66% Snorkelling	63% Snorkelling
Segment 4 (n=629)	34% Swimming	51% Swimming	51% Swimming
Segment 5 (n=394)	27% Marine animals	30% Marine animals	29% Marine animals
Segment 6 (n=224)	25% GBB/Semi-sub coral viewing	29% Sailing	26% GBB/Semi-sub coral viewing
	13% Cert. scubadive	25% Cert. scubadive	24% Visit islands
		21% Visit islands	17% Cert. scubadive
<b>SATISFACTION</b>			
Scores	8.48 (Std Dev 1.167)	8.37 (Std Dev 1.120)	8.43 (Std Dev 1.148)
Recommendation	96.5% Yes	98.1% Yes	96.9% Yes

### Summary of nature and relax segments

#### Segment 7

Segment 7 was characterised by an older, domestic market of professionals and semi/retired visitors who had a degree qualification (Table 12). They were repeat visitors to the region, travelled as couples or alone, and preferred to stay in hotel/motels and holiday apartment style accommodation. Their main source of information was knowledge gained from previously visiting the region. Segment 7 was similar to the repeat, domestic market described for segment 6, however differences are apparent in visitors' travel motivations and reef and rainforest experiences.

Rest and relaxation was the most important motivation, followed by experiencing the natural environment, and visiting the GBR and rainforest. Half of these visitors headed

north to Port Douglas and another 40% visited the Daintree. Others headed west to Kuranda and regional areas like Mareeba and Atherton. While the majority visited the rainforest on a repeat visit, less than half visited the GBR on this return trip: a finding consistent with previous research – indicating that repeat visitors perceive the GBR as a one-off destination/one-time experience. Of those visitors who went to the GBR, about half participated in snorkelling and swimming, while more than half went walking, relaxed and admired the scenery when visiting the rainforest.

### ***Segment 8***

Most of segment 8 were first-time, international visitors from the UK and Ireland, Europe and Germany. They were more likely to be younger females, employed as professionals or students with a degree education, who travelled as couples or with friends. Their travel party composition was likely to be couples or groups of friends, who stayed in backpacker accommodation on the recommendation of friends. This segment was also most likely to refer to guidebooks for information.

Visitors in segment 8 travelled close to Cairns, visiting popular tourist spots such as Kuranda and the Daintree, but were not as likely to visit regional areas west and south of Cairns. Their primary motivations, i.e. to visit the GBR, followed by seeing Australian wildlife and snorkelling/diving, differentiates them from segment 7. They were more likely to visit both the GBR and WTR, with 81% and 71% visiting these world heritage icons respectively. As well as snorkelling and swimming while on the GBR, these visitors participated in sailing, seeing marine wildlife and viewing coral through a glass-bottom boat. While walking was the most popular rainforest activity, visitors in this segment also saw wildlife, admired the scenery and took photos.

### ***Segment 9***

Most of the visitors in segment 9 originated from overseas, with a large group from North America. The segment was characterised by older, female visitors, who were likely to be students or professionals with a degree qualification. Almost all visitors were visiting TNQ for the first time. Segment 9 visitors were more likely to be travelling as couples or families with children, staying in hotel/motels and sourcing information from friends and relatives and the Internet. This segment is similar to segment 8, where dispersal of visitors tended to favour popular locations in close proximity to Cairns, such as Port Douglas to the north and Kuranda to the west.

The travel motivations for segment 9 closely resemble those for segment 8. However, rest and relaxation was more important to segment 9, while segment 8 preferred snorkelling and diving. Although segment 9 visitors had the highest visitation rates to the GBR and WTR of the three segments, their participation in reef and rainforest activities was the same or below those for Segments 7 and 8.

**Table 12:** Profile of nature and relax segments.

<b>Nature &amp; Relax Cluster (n=1618)</b>	<b>Segment 7 23% (n=373)</b>		<b>Segment 8 46% (n=738)</b>		<b>Segment 9 31% (n=507)</b>	
<b>SOCIO-DEMOGRAPHICS</b>						
Gender	44% Male 56% Female		40% Male 60% Female		38% Male 62% Female	
Age	23% <29yrs 37% 30-49yrs 30% 50-65yrs		53% <29yrs 28% 30-49yrs 18% 50-65yrs		31% <29yrs 31% 30-49yrs 25% 50-65yrs	
Origin	87% Domestic 13% International 5% NZ 4% UK		9% Domestic 91% International 40% UK 40% Europe 13% Germany		27% Domestic 63% International 49% N.America 10% UK	
Occupation	28% Professional 13% Semi/retired		23% Professional 22% Student		24% Student 21% Professional	
Education	54% Degree 20% Diploma		55% Degree 21% Secondary		48% Degree 20% Secondary	
<b>TRIP BEHAVIOUR</b>						
First/repeat visit	100% Repeat		87% First		97% First	
Travel party	35% Couple 25% Alone		44% Couple 33% Friends		28% Couple 28% Families + kids	
Accommodation	=24% Hotel & apart =21% Resort & VFR		35% Backpackers 30% Hotel/motel		40% Hotel/motel =29% Apart & resort	
Information sources	51% Been before 38% Friends/rels 22% Internet		47% Friends/rels 41% Guidebook 35% Internet		46% Friends/rels 34% Internet 27% Guidebook	
<b>MOTIVATIONS</b>						
Top 5 (Mean Rank)	1 Rest & relax 4.39 2 Natural env 4.11 3 Visit GBR 4.07 4 Visit rainforest 4.03 5 Climate 4.02		Visit GBR 4.63 Aust. wildlife 4.29 Visit rainforest 4.15 =Natural env 4.15 Snorkel/dive 4.10		Visit GBR 4.61 Aust. wildlife 4.27 Visit rainforest 4.26 =Natural env 4.18 Rest & relax 4.16	
<b>DISPERSAL</b>						
	51% Port Douglas 40% Daintree 38% Kuranda 30% Mareeba 29% Atherton		40% Port Douglas 37% Kuranda 36% Daintree 31% Cape Trib		45% Port Douglas 45% Kuranda 39% Daintree 28% Cape Trib	

<b>RAINFOREST EXPERIENCE</b>			
Visitation	61% Visited WTR, Majority - Repeats	74% Visited WTR, Majority - First time	82% Visited WTR, Majority - First time
Locations	49% Kuranda 38% Daintree 34% Mossman 30% Cape Trib	47% Kuranda 38% Daintree 36% Cape Trib 31% Mossman	66% Kuranda 38% Daintree 34% Mossman 28% Cape Trib
Activities	64% Walking 54% Relaxation 51% Scenery 47% See wildlife 42% Film/photo =42% Swimming	62% Walking 52% See wildlife 44% Film/photo 41% Scenery 40% Relaxation	53% Walking 46% See wildlife 41% Scenery 40% Film/photo 39% Relaxation
<i>Segment 7 (n=226)</i>			
<i>Segment 8 (n=549)</i>			
<i>Segment 9 (n=418)</i>			
<b>REEF EXPERIENCE</b>			
Visitation	47% Visited GBR, Majority – Repeats	81% Visited GBR, Majority - First time	85% Visited GBR, Majority - First time
Activities	59% Snorkelling 50% Swimming 27% Marine animals 22% GBB/Semi-sub coral viewing 21% Cert. scubadive	61% Snorkelling 53% Swimming 31% Sailing 30% Marine animals 25% GBB/Semi-sub coral viewing	51% Snorkelling 45% Swimming 30% Marine animals 29% GBB/Semi-sub coral viewing 17% Sailing
<i>Segment 7 (n=175)</i>			
<i>Segment 8 (n=597)</i>			
<i>Segment 9 (n=431)</i>			
<b>SATISFACTION</b>			
Scores	8.38 (Std Dev 1.442)	8.56 (Std Dev 1.130)	8.70 (Std Dev 1.166)
Recommendation	95.4% Yes	96.7% Yes	97.7% Yes

### 4.3 Trends in visitor clusters and segments

Visitor segments change over time for many reasons, including changes in the appeal of the destination, the emergence of new destinations and external forces such as the Global Financial Crisis (GFC). The data derived from this study enable changes in visitor clusters and visitor segments over time to be identified. However, the data is unable to identify the causes of changes in the composition of these clusters and segments.

The rest and relax cluster is growing relative to the other clusters while the nature and rest cluster has remained stable during the study period (Figure 10). The nature and activity cluster is trending downwards, with decreasing visitor numbers.



Visitor trends were also analysed at the segment level. Due to the smaller group sizes, particularly of the rest and relax cluster, the data has been analysed on an annual rather than a monthly basis.

Analysis of the rest and relax visitor segments revealed a relatively large, stable segment 1, with a growing proportion of segment 2 visitors in 2010 (

Figure 11). Segments 1 and 2 represented repeat, domestic visitors from the older couples and younger family markets respectively.

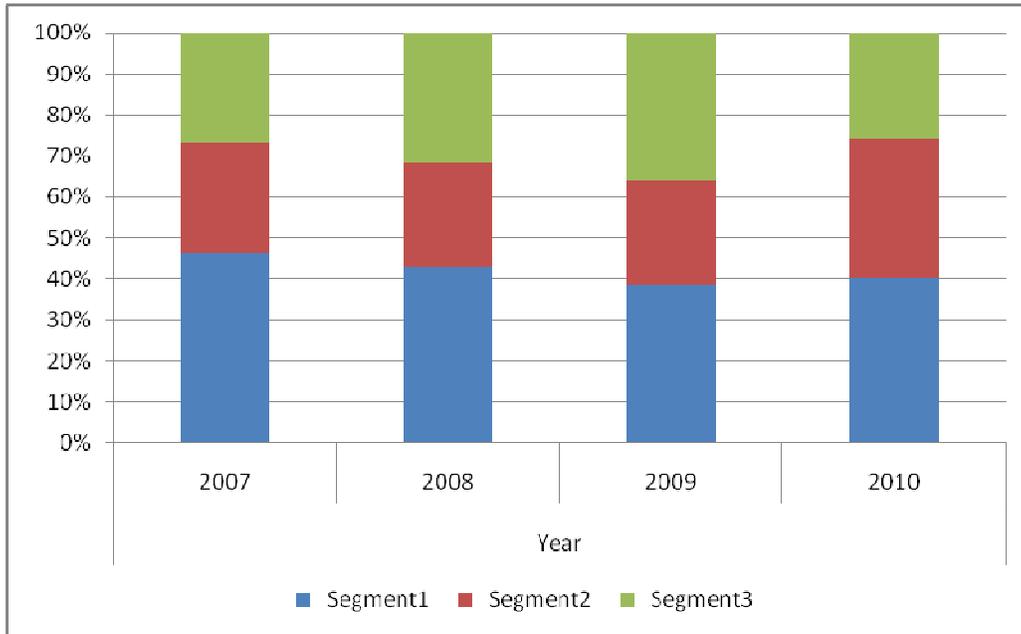


Figure 11: Changes in segments 1–3 from 2007 to 2010.

Segment 5 increased in 2010, while the other two segments decreased (

Figure 12). Segment 5 was characterised by young, first-time, international visitors, the majority of whom originated from the UK, Ireland and Europe. In contrast, segment 4 was comprised of older visitors, on their first trip to Cairns from the UK and North America, and segment 6 can be described as older, repeat domestic visitors.

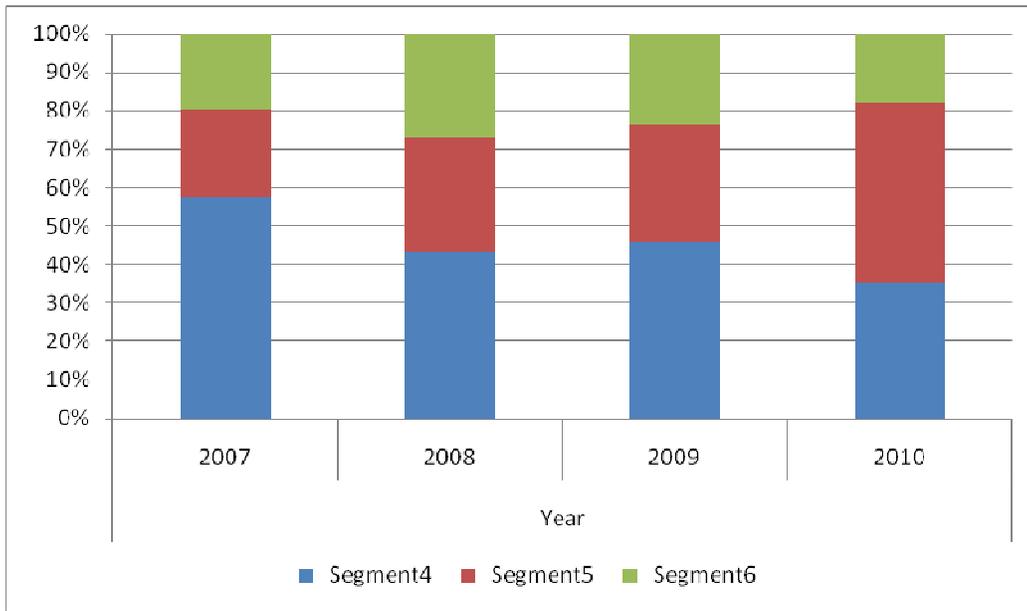


Figure 12: Changes in segments 4–6 from 2007 to 2010.

While the trendline for the nature and relax cluster remained steady over the course of the survey period, changes were observed within the segments (Figure 13). Consistent with previous findings, the international youth market represented by segment 8 increased in size from 2007 to 2010 while the other two segments decreased. Visitor numbers for the older, international, primarily North American market (segment 9) suffered a greater decline than the older, repeat domestic visitor market (segment 7).

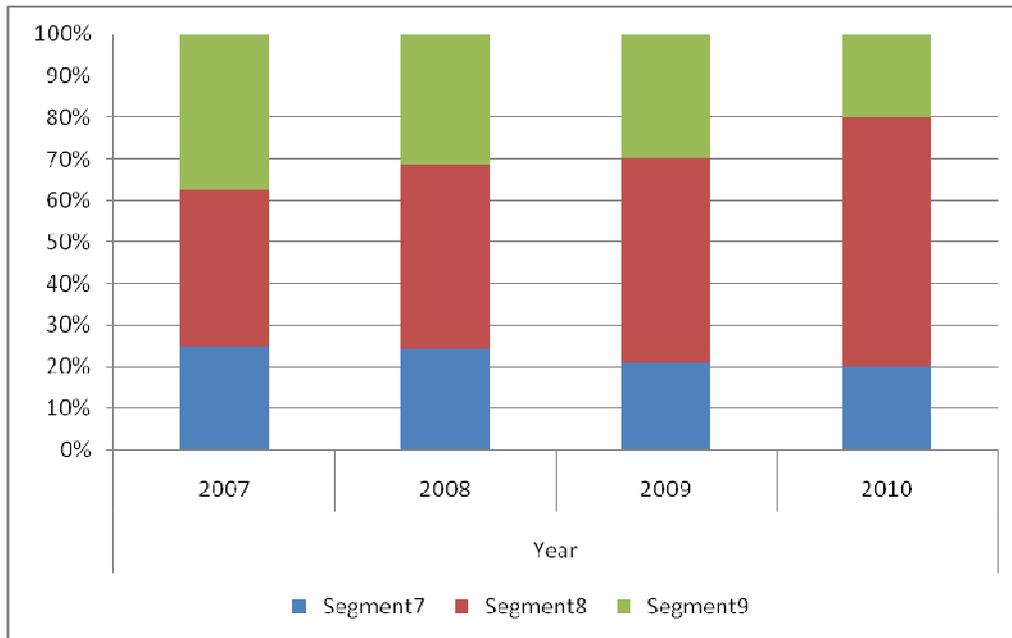


Figure 13: Changes in segments 7–9 from 2007 to 2010.

## 5. Discussion and conclusion

The purpose of this research was to identify specific visitor segments in Tropical North Queensland. A two-step cluster analysis was used to initially identify the region's major motive based clusters and then to identify specific segments within each cluster. Three primary clusters were identified and tracked over a four-year period. The smallest cluster, 'rest and relax', exhibited a pattern of slow growth however the nature and rest cluster remained stable over the four years of the study. The third cluster, nature and activity, declined in size relative to the other clusters over the study period. Further analysis introduced country of origin, age group, travel party and first/repeat visit enabling these clusters to be subdivided into specific segments. The segments identified in this research broadly conform to the guidelines developed by Morrison (1996); the segments identified appear to be homogeneous, measurable, substantive, accessible and competitive.

One significant finding of this study is the importance of nature-based tourism on the GBR and the WTR as the region's key pull factor. Nature is unquestionably the region's primary asset and major point of differentiation from other competing regions, nationally and internationally. However, emphasis only on this aspect of the destination limits the ability of the region to attract visitors who place a higher emphasis on non-nature push factors as their primary reasons for travel. The rest and relax cluster for example, highlights the potential for developing significant new sectors that may be looking for experiences other than the reef or rainforest. A broadening of the region's pull factors beyond nature to include adventure, food, sport and culture may provide new opportunities to attract new visitor segments.

Segmentation is an important tool for marketers and the results of this research indicate that the region has a number of well-defined segments. The value of this research lies in the data that it offers on specific segments and the opportunities that it provides for the destination and individual operators to identify new markets or opportunities to develop new products and services. Over time however, visitor push factors are likely to undergo change, resulting in changes to the characteristics of the segments. For this reason ongoing research of this nature is required to monitor change and provide the destination with the opportunity to identify these changes and respond rapidly.

## 6. References

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## APPENDIX A – SURVEY INSTRUMENT

1. Are you:  Male  Female

2. Where do you usually live? Australia (postcode) \_\_\_\_\_ Overseas (country)  
\_\_\_\_\_

3. Please indicate the year you were born: 19\_\_\_\_

4. How would you best describe your occupation: (Please choose only one)

- Self-employed  Professional  Retail  Domestic duties  
 Management  Office/Clerical  Public Service  Manual/Factory worker  
 Service Industry  Tradesperson  Student  Retired

5. Which of these best describes your immediate travel party:

- Alone  Couple  Tour group  Club  
(partner/spouse)  
 Friends  Family with children  Relatives

6. Was this your first visit to Tropical North Queensland (TNQ)?

- Yes  No If No, how many times have you visited?  
\_\_\_\_\_

7. How many nights in total will you be away from home this holiday?  
\_\_\_\_\_

8. How many nights did you spend in Tropical North Queensland (TNQ)? \_\_\_\_\_

9. What was your main type of accommodation during your visit to Tropical North Queensland (TNQ)?

- Hotel/motel  Resort  Backpackers hostel  Holiday apartment/unit  
 Caravan park/cabin  Camping  Bed & breakfast  Friends/relatives

10. During your stay in TNQ where did you stay the most nights (select one only)?

- Cairns  Palm Cove  Port Douglas  Daintree

- Mission Beach     
  Yungaburra     
  Cape Tribulation     
  Other \_\_\_\_\_

**11. Where did you find out about TNQ?** (Please select all that apply)

- Internet     
  Tourist books     
  guide     
  Friends/family     
  Advertisements in print  
 Travel Agent     
  TV documentary     
  Visitor centres     
  Advertisements on TV/radio  
 Been before     
  Facebook     
  Other \_\_\_\_\_

**12. Please tell us where you spent your last holiday:** \_\_\_\_\_

**13. Please list up to 3 other destinations you considered while planning your current holiday:**

- 1) \_\_\_\_\_     
 2) \_\_\_\_\_     
 3) \_\_\_\_\_  
 \_\_\_\_\_

**14. Please indicate the highest level of formal education that you have received so far:**

- Secondary     
  Trade/TAFE     
  Diploma     
  Degree     
  Other \_\_\_\_\_

**15. Thinking about this trip to TNQ, what was the overall budget for your travel party?** (including airfares, accommodation, tours, and all other expenses)

AU\$ \_\_\_\_\_ How many people does this amount budget for? Adults \_\_\_\_\_ Children \_\_\_\_\_

**16. Please indicate how important each of the features were in your decision to visit TNQ:**

	<i>Not at all Important</i>	<i>Unimportant</i>	<i>Neutral</i>	<i>Important</i>	<i>Very Important</i>
Visit the Great Barrier Reef	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visit the Wet Tropics rainforest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
See Australian wildlife	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Experience Aboriginal culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Climate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The price matched my budget	<input type="radio"/>				
Experience the natural environment	<input type="radio"/>				
Rest and relax	<input type="radio"/>				
Snorkelling and diving	<input type="radio"/>				
Spend time with my family	<input type="radio"/>				
Meet new people	<input type="radio"/>				
Visit the beaches	<input type="radio"/>				
Taste tropical fruits	<input type="radio"/>				
Visit friends and relatives	<input type="radio"/>				
Experience the outback	<input type="radio"/>				
Go shopping	<input type="radio"/>				
Visit the islands	<input type="radio"/>				
Adventure activities	<input type="radio"/>				
Business/conference/meeting	<input type="radio"/>				
Walk in the rainforest	<input type="radio"/>				
Visit a World Heritage area	<input type="radio"/>				
Participate in nightlife	<input type="radio"/>				
To learn about the natural environment	<input type="radio"/>				
To sample the region's foods	<input type="radio"/>				
To 'party'	<input type="radio"/>				

**17. During your trip to TNQ, please indicate the location(s) that you visited:**

- |                                        |                                    |                                 |                                  |                                     |
|----------------------------------------|------------------------------------|---------------------------------|----------------------------------|-------------------------------------|
| <input type="radio"/> Kuranda          | <input type="radio"/> Mareeba      | <input type="radio"/> Atherton  | <input type="radio"/> Malanda    | <input type="radio"/> Millaa Millaa |
| <input type="radio"/> Mission Beach    | <input type="radio"/> Port Douglas | <input type="radio"/> Innisfail | <input type="radio"/> Yungaburra | <input type="radio"/> Ravenshoe     |
| <input type="radio"/> Cape Tribulation | <input type="radio"/> Daintree     | <input type="radio"/> Cooktown  | <input type="radio"/> Undara     |                                     |

**18. Did you visit the Wet Tropics rainforest during this trip to TNQ?**

Yes

Was this your first visit to the Wet Tropics rainforest?

Yes  No If No, how many times have you visited? \_\_\_\_\_

Where did you go? (Please indicate all that apply)

- Kuranda                       Atherton Tablelands                       Cape Tribulation                       Daintree
- Mossman Gorge                       Innisfail region                       Mission Beach region                       Paluma
- Lakes area                       Waterfalls circuit                       Misty Mountains                       Other \_\_\_\_\_

**Please indicate which of the following activities you participated in?** (Please select all that apply)

- Hiking                       Walking                       Film/Photography                       Bird watching
- Viewing scenery                       Viewing wildlife                       Visiting information centres                       Reading site interpretation
- Socialisation                       General relaxation                       Bike riding                       Swimming
- 4WD                       Commercial tour                       Camping                       White Water Rafting
- Visit a zoo                      Animal spotting                      Small group tour (1-5) people

**No**

Why not? (Choose as many as apply)

- Not enough time                       Not interested                       Too expensive                       No available information
- Activities not available                       The rainforest is too damaged                       Bad weather                       Not enough walking tracks
- I have been before                       No tours where I wanted to go                       Other \_\_\_\_\_

**19. Have you visited other Tropical Rainforests overseas?**

**Yes**

**No**

If Yes, please indicate where you have visited, and also tell us how satisfied you were with the condition of the natural environment,

ie. the environment was well-managed.

Where?	Very unsatisfied	<i>Fairly unsatisfied</i>	<i>Neutral</i>	<i>Fairly satisfied</i>	<i>Highly satisfied</i>
_____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

—					
—					
—	<input type="radio"/>				
—	<input type="radio"/>				

**20. Did you visit the Great Barrier Reef during this trip to TNQ?**

**Yes** Was this your first visit to the Great Barrier Reef?  Yes  No If *No*, how many times have you visited? \_\_\_\_\_

Where did you depart from?

- Cooktown     Port Douglas     Cairns     Mission Beach  
 Townsville     Airlie Beach     Mackay     Other \_\_\_\_\_

Which of the following activities did you participate in? (Please select all that apply)

- Swimming     Helicopter flight     Certified scuba diving     Resort/uncertified scuba diving  
 Snorkelling     Visiting the islands     Overnight cruise     Glass bottom boat/semi-sub coral viewing  
 Sailing     Marine biologist tour     Diver training course     Viewing marine animals

**No** Why not? (Choose as many as apply)

- Not enough time     I get seasick     I have been before     Not interested  
 Too expensive     The reef is too damaged     Unconfident swimmer     Don't diving/snorke  
 Bad weather     Travel party didn't want to     Other \_\_\_\_\_

**21. Have you visited any of the following reefs?**

- Caribbean     Hawaii     Indian     South

- Ocean                      Pacific
- South East Asia     Micronesia     Red Sea     Ningaloo

**22. How do the other reefs that you have visited compare with the Great Barrier Reef?**

	<i>Better</i>	<i>Same</i>	<i>Worse</i>		<i>Better</i>	<i>Same</i>	<i>Worse</i>
South East Asia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Red Sea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
South Pacific	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Hawaii	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Indian Ocean	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Micronesia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Caribbean	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Ningaloo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**23. How important is it for you to learn about the marine ecosystem?**

- Not at all important     Not very important     Important     Very important

**24. Before this trip did you look for information about the ecosystem in Tropical North Queensland?**  Yes     No

**25. Do you consider yourself to be an ecotourist (that is someone who is highly motivated to experience nature)**

- Not at all                       I am interested in nature but don't call myself an ecotourist                       Yes I see myself as an ecotourist

**26. Did you visit the region to attend a wedding?**  Yes     No

**27. Are you honeymooning on this holiday?**  Yes     No

**28. Please tell us the last place you visited before coming to TNQ?**

\_\_\_\_\_

**29. Please tell us where you will go after leaving TNQ?**

\_\_\_\_\_

**30. If you are an international visitor, which city did you arrive in Australia?**

\_\_\_\_\_

31. Which airline are you using today?

- Qantas  Jet star  Virgin Blue  Other \_\_\_\_\_

32. Do you normally use this airline for holiday transport?  Yes  No  Sometimes

33. When booking your trip, did you book any part of it through a travel agent?  Yes  No If Yes, What part of your trip? \_\_\_\_\_

34. Did you use the internet to look for information on Cairns?  Yes  No

35. Did you book any of the following elements of this trip on the internet? (Tick all that apply)

- Accommodation  Airline  Rental car  Tours  Other \_\_\_\_\_  
\_\_\_\_\_

36. Did you make an internet booking during your holiday?  Yes  No

37. When booking a tour or hotel do you look for businesses that are eco certified?

- No  Sometimes  Usually

38. While you are on a holiday do you use any of the following to tell friends and family about your holiday? Please select any that apply.

- Texting  Post cards  Bloggs  Landline phone Texting  
 Twitter  Send a letter  Email  I use my mobile phone  
 U Tube  Facebook

39. Please tell us what you consider to be the two most serious environmental concerns facing society in the future

- 1 \_\_\_\_\_  
\_\_\_\_\_  
2 \_\_\_\_\_  
\_\_\_\_\_

**40. Thinking about climate change what do consider to be the top three causes of this problem?**

1 \_\_\_\_\_  
\_\_\_\_\_

2 \_\_\_\_\_  
\_\_\_\_\_

3 \_\_\_\_\_  
\_\_\_\_\_

**41. Please tell us how you think climate change may affect the TNQ region in the future.**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**42. On the scale below, how would you rate the overall quality of your visit to the TNQ region?**

<i>Not</i>												<i>satisfactory</i>
<i>Highly satisfactory</i>	1	2	3	4	5	6	7	8	9	10		
	<input type="radio"/>											

***Many thanks for your time in completing this survey.***