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Who's Riding the Wave? An Investigation Into Demographic and Psychographic Characteristics of Surf Tourists

Abstract

Surfing has grown from its beginnings as a western civilisation sport in the early 1900's to a stage where it is now an industry worth an estimated $8 billion dollars and involves surfers travelling to both domestic and international destinations as surf tourists. However, there is a dearth of empirical academic research that has been conducted into this segment of the sports tourism market. This study makes a contribution towards understanding surf tourism behaviour by analysing the demographic and psychographic characteristics of 430 surf tourists. The most lucrative segments of the five identified, from the tour operators perspective, are the price conscious safety seekers and the luxury surfers, while the lack of crowds at surfing destinations is a common preference with all groups. Areas of future research include surf destination image and the ratio of surf tourists choosing package tours compared to being free independent travellers.

1. Introduction

The sport sector of the tourism industry has had a significant impact in Australia by "contributing billions of dollars to the economy and employing tens of thousands of Australians" (Towards a National Sports Tourism Strategy, 2000). It is proposed that within this broad classification of sport tourism, exists the phenomenon of surf tourism. According to Fluker (2002), surf tourism may be defined as the act of people travelling to either domestic locations for a period of time not exceeding 6 months, or international locations for a period of time not exceeding 12 months, who stay at least one night, and where the active participation in the sport of surfing, where the surfer relies on the power of the wave for forward momentum, is the primary motivation for destination selection. This definition is based upon that suggested by Standeven and De Knop (1999) when they describe a single adventure sport activity holiday as being a subset of sport tourism. The purpose of this paper is to explore and describe the market of surf tourists so that companies seeking to target this group may be able to design more effective marketing strategies.

Historically, surfing was first introduced to Australia and New Zealand in 1915 when the Hawaiin named Duke Kahanamoku brought with him a long board and performed surfing demonstrations (Williamson, 2000, Pearson, 1979). Since this time, the global industry of surfing has grown enormously and has an estimated worth of $8 billion (Weidler, 2002, pg.5). This growth is also evidenced by retail surf companies such as Billabong being publicly listed and having a worldwide market capitalism of $AUS1.47 billion (Syvret, 2002). Furthermore, it is estimated that 366,200 Australians actively participated in surf sports in the year 2001 (Dale and Ford, 2002). This current study proposes that not only do many people actively participate in the sport of surfing, but that a significant number of people also undertake travel as surf tourists. This proposition is supported by the fact that one Australian based surf tourism company named "The Surf Travel Company" sent 2,450 surfers to various surf

locations around the world in the year ending 30 June, 2002. These destinations include Indonesia, the Maldives, Samoa, Fiji, New Caledonia, and Tonga.

The sports tourism sector suffers from a lack of reliable data on which to base strategic decision-making (Towards a National Sports Tourism Strategy, 2000). Given the size and significance of the surf tourism market in particular, it is surprising that while some academic research has been conducted and will to be discussed shortly, little in the way of empirical research has been presented. For example, electronic data base searches for refereed papers in English using Ebsco Host (dates searched: 1980 - 2002), Science Direct (dates searched: 1967 - 2002), Expanded Academic Index (dates searched: 1980 - 2002), the National Recreation Database (dates searched: 1960 - 2002), Social Sciences Plus (dates searched: 1986 - 2002), and Emerald (dates searched: 1967 - 2002), yield no results when conducting the search for "surf tourism" (Fluker, 2002). By conducting an empirical study on surf tourists, contributions can be made by providing data-driven insights into this specific area of tourism.

Collecting feedback on tourism services that are highly industrialised can be relatively simple according to Leiper (1995). This author describes an industrialised tourism experience as one whereby the consumers "make extensive use of services offered by tourism industries" (Leiper, 1995, p. 309) and identifies these industrial sectors of the tourism industry as including pre-trip services such as travel agencies, outbound tour operators, airlines and hotels. Collection of information from these tourists is made easier by the fact that existing databases, with names and contact details of past clients, exist. Alternatively, the independent traveller is harder to survey as their contact details are not stored by any "principal-agency links" (Leiper, 1995, p. 310). Are surf tourists more inclined to be users of a highly industrialised service, or are they best typified as being fully independent travellers? While this question falls out of the general scope of this paper, it is relevant in that the anticipated findings are largely aimed at providing tour operators with marketing information on surf tourists.

Market segmentation allows marketers to "develop a better understanding of distinct tourist characteristics and for developing marketing strategies" (Park et al., 2002, p.55). If the relatively unexplored area of surf tourism can be described in terms of distinct market segments, then the purpose of this study may be addressed. Poizat-Newcomb (1999) suggests that surf tourists are a single but viable segment for small island states such as Puerto Rico to target because of the markets ecological conscientiousness. This historical and anecdotal study of surfing in Puerto Rico also considers the differences between two distinct groups of wave rider, those being boogie boarders (a soft torso length craft which is ridden in a laying down position) and surfers (those who ride the wave in a standing position). Whilst there may be certain rivalries and degrees of conflict between these two groups, both are included within the definition of surf tourism used in this study. Part of the antagonism between these two groups is due to the "issue of respect, especially in regards to the amount of ability required to participate in each activity" (Poizat-Newcomb, 1999, p. 11). The time taken to learn to surf standing up far greater than the time taken to learn to boogie board.

Farmer (1992), conducted research into the motivations, values and culture of surfers, and based on an interview with a surf shop manager, suggested that four groups of surfers could be identified. These groups are described as the "rowdy bunch" who like to party a lot, the "school boys" who initially came to the Californian location to study and then chose to surf as

an after thought, the "weekend warriors" who work during the week and surf when they can, and lastly, the "beach bums" who have "dropped out of society and made surfing a complete way of life" (Farmer, 1992, p. 245). Douvis, Aminuddin and Douvis (1999) found that distinctions could be made between sport tourists based on both demographic and psychographic characteristics and that marketers should segment the market on this basis. This current study proposes that the market of surf tourists is more complex than the four groups identified by Farmer (1992). The aim of this study is to provide a more comprehensive description of individual surf tourist segments based on empirical demographic and psychographic characteristics, as suggested by Douvis, Aminuddin and Douvis (1999).

2. An Empirical Perspective of Surf Tourism

The data set used in this study consists of 430 respondents who participated in an online-survey[1] conducted by the Surf Travel Company, a Sydney based tour operator specialising in surf travel, during the month of August, 2000. Respondents were encouraged to participate by having their names go into a draw for a $AUD3,200 surf trip to the Mentawais, a popular surfing destination located in Indonesia.

The 17 psychographic, or "importance" questions, were originally posed offering ordinal answer categories. For the purpose of analysis, the data was binarised by merging the categories of "not important" and "slightly important" on the one hand and "very important" and "extremely important" on the other hand. The reason for this binarisation is the underlying distance measure used in all applied partitioning procedures (Euclidean distance) which can not be used with ordinal data without assuming metric properties of the scale. This assumption cannot be made for the data at hand. The resulting data set to be partitioned thus consists of 430 respondents who indicated the importance of the 17 factors concerning their choice of a surf tour.

In addition to the psychographic information gathered, respondents were asked various other demographic questions, which could roughly be divided into "surf related questions", "personal characteristics" and "travel behaviour". Surf related questions include the preferred wave size and type, the regularity of surf travel undertaken, the respondents surfing ability and the number of years surfed. Personal characteristics include education and income level as well as the respondents' age and sex. Finally, travel behaviour is investigated by asking respondents to state how long they stay, with which travel companions they travel, how much money they spend at the destination per day, how important destination novelty is to them, and how much they move within the destination during their stay. These variables are used to describe the segments derived from the psychographic segmentation base. Obviously, it would be of great interest to have more background information of this kind in order to best possibly describe the segments and make them as "manageable" as possible for a destination or tourism industry. However, only the information described earlier is available in this data set.

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[1] The questionnaire was designed by Jess Pointing as part of his postgraduate coursework. Thus, it was not possible for the authors of this study to influence either the questionnaire design or the data collection method.

3. Methodology

An unsupervised neural network algorithms (topology representing network, TRN, Martinetz and Schulten, 1994) was used for partitioning the data. The algorithms works as follows: (1) the number of segments to be revealed (Frank, Massy & Wind, 1972; Myers & Tauber, 1977) or constructed (Mazanec, 1997; Wedel & Kamakura, 1998) is defined beforehand, (2) starting vectors are picked at random, where the number of starting vectors (or prototypes) is equal to the number of segments and dimensionality equals the number of variables (items, questions) used as segmentation basis, (3) one case (the answer pattern of one respondents with regard to all variables included) is presented to the network, (4) the closest prototype is computed, declared to be the "winner" and allowed to adapt it's vector values towards the values of the case presented to a predefined extent ("learning rate"). (5) In addition to this winner, one or more neighbours of the winner are allowed to adapt their vector values to a lower extent. By enabling the latter procedure, not only does a grouping result from the computation procedure, but also, neighbourhood relations are mirrored. This adaptive procedure described above is repeated numerous times for the entire data set with a decreasing learning rate. This means that at the beginning, a rough sorting and adaptation of the starting points takes place, while at the end only finetuning of the solution occurs. After this learning phase (training run), in which the network learns to best possibly represent the empirical data, a so-called recall run is performed. Here, all cases are presented to the network one more time. Based on the smallest distance they are assigned as a member to one of the prototypes thus leading to a deterministic grouping solution.

The differences of the unsupervised neural network procedures used compared to the k-means algorithm (the most frequently used iterative partitioning technique for clustering data for the purpose of touristic market segmentation (Baumann, 2000) are the case-wise adaptations of prototype values on the one hand (instead of assignment of all cases with subsequent centroid computation), and the step-wise decrease of the learning rate. Finally, and most fundamentally, this allows for neighbourhood learning which leads to topological arrangement of the segmentation. The same critiques applies to the topology representing network as to all clustering procedures within the family of partitioning techniques. Main advantages include reversibility of group assignments and capability of dealing with large amounts of data, whereas the main disadvantage is a lack of support in choosing the optimal number of clusters. Whatever clustering algorithm is used, the relation of the number of variables and the number of respondents is always crucial. Unfortunately no rules exist about the relation (sample size) needed. However, the sample size of 430 in this study would have to be considered fairly small for 17 variables. Due to the high dimensionality of the data, a larger sample would be preferable.

Random starting points for segmenting the surf tourists were chosen on a best-of-1000-draws basis. The entire data set was presented to the networks 90 times for training purposes with the learning rate decreasing from 0.01 to 0.0001.

4. Descriptive data analysis

Although the main focus of the study is on the construction of distinct market segments, a purely descriptive analysis of the information used is provided in Table 1 and Table 2 (in the

Appendix). Table 1 is presented in an aggregated manner and shows the background variables used to describe the respondents. Table 2 shows the variables used to segment the respondents in psychographic terms and shows the percentage of total respondents who found each variable important.

In Table 1 it can be seen that the average age of 30 years represents the only metric variable available. For the remaining items, percentages are given in the table. Thus, 11 percent of the surfers who filled out the questionnaire have less than two years of surfing experience, 17 percent between 3 and 5 years, 19 percent between 6 and 10 years, 21 percent between 11 and 15 years, 10 percent between 16 and 20 years and finally 22 percent more than 20 years. Of the group of surf tourists surveyed, 93% are male. This dominance of males in the sport supports the finding by (Dale and Ford, 2002, p.7) when they found that only 8% of the 366,200 Australian surf sport participants surveyed in 2001 were female.

It is interesting to note that 60% of the surfers surveyed preferred waves that are between 4 and 6 feet high and that 27% preferred waves 6 to 8 foot high. Additionally, 46% of these surfers wished to find these waves on easy points and reefs, whereas 40% seek surf breaks in the form of challenging hollow waves. More than half (55%) of the respondents reported that they prefer surfing holidays to last less than 2 weeks, 48% seek new countries and new breaks, and 73% say that they prefer to move through a variety of areas within a destination. This generally describes the apparently very mobile, experience-gathering travel pattern of surf tourists.

While the findings in Table 2 show that 59% of respondents find personal safety important, 57% find health concerns important and 58% find quality of natural environment important, the most important feature of the surf destination is the lack of crowd, with 72% of respondents finding it so.
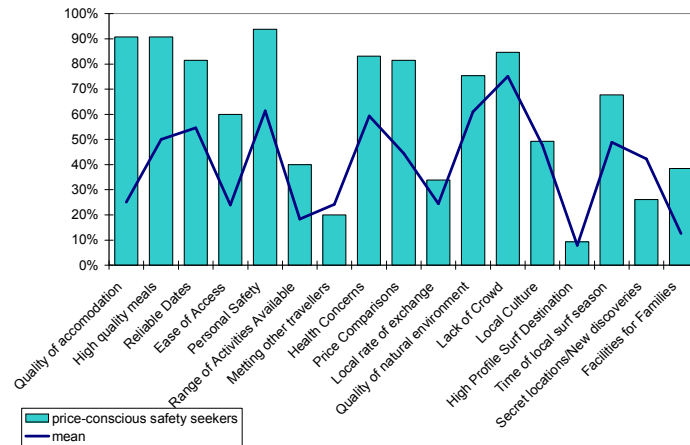
5. Psychographic surfer segments

Stability of clustering within one number of clusters (replication study based) does not turn out to be a useful criterion for choosing the optimal number of clusters, as stability levels do not vary between numbers of clusters. A five cluster solution was chosen because contingency tables between solutions with different numbers of clusters reveal that there is high congruence of surfer types with both the four and the six-segment solution indicating local stability of types over solutions with different number of segments.

As can be seen in Figure 1, psychographic segment 5 (P5, coined "radical adventurers", representing 19 percent of the sample) shows the most distinct group of surfers with regard to stated importance's with the time of the local surf season as well as secret locations being important to the majority of this segment. Local culture, the lack of crowd and quality of natural environment play a central role as well. P4 (23 percent of the sample) does not seem to feel that anything is important at all and may be termed the "ambivalents". This segment has to be interpreted with care, as there is a high possibility of answer tendencies being hidden in this group. Segment P2 ("luxury surfers", 19 percent) is interesting from the perspective that neither the price nor the exchange rate are very important. What is more important to this

group is that the accommodation be good, the food excellent and that safety is assured. Segments P1 ("price-conscious safety seekers") and P3 ("price-conscious adventurers ") are very similar to each other. The surf-related items are important to these segments. Personal safety and health also play an important role, as do high quality meals and reliable dates. The main differentiating factors however, are the importance for family facilities and the quality of accommodation in P1 ("price-conscious safety seekers", 15 percent) and the search for new locations and discoveries as well as the lack of crowd in P3 ("price-conscious adventurers ", 24 percent).

Figure 1: Psychographic profile of the price-conscious safety seekers

Figure 2: Psychographic profile of the luxury surfers
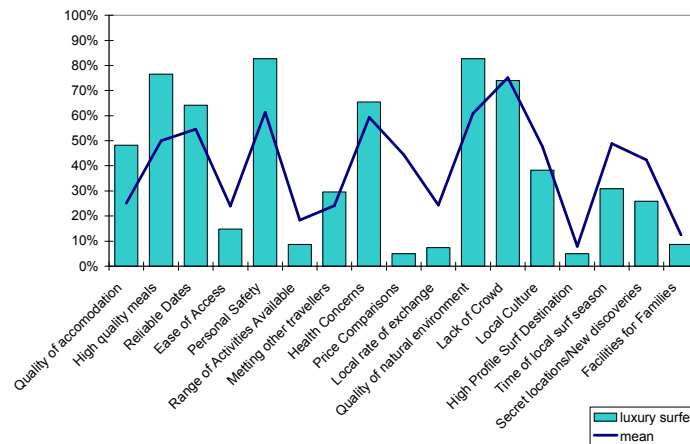
Figure 3: Psychographic profile of the price-conscious adventurers

Figure 4: Psychographic profile of the ambivalents

Figure 5: Psychographic profile of the radical adventurers
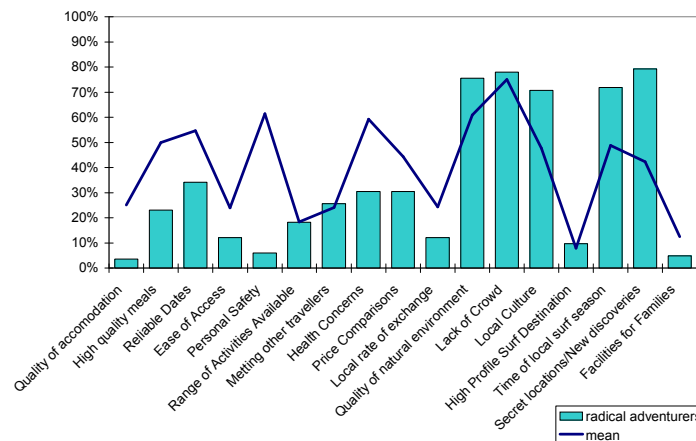
An analysis of the descriptive variables demonstrates discriminance between the psychographic segments constructed and is shown in Table 3 in the Appendix. The radical adventurers (P5) are the youngest group, wh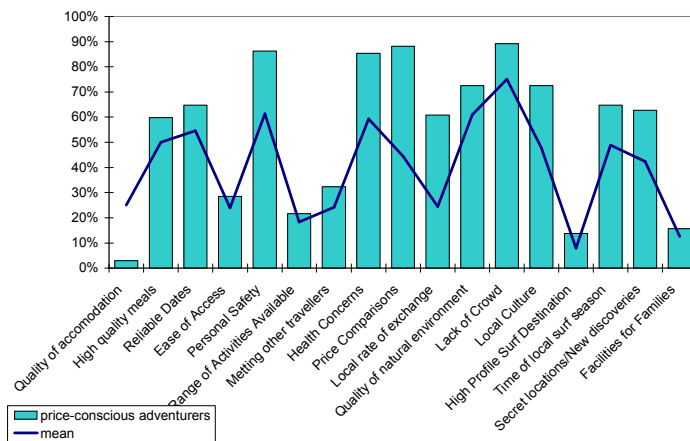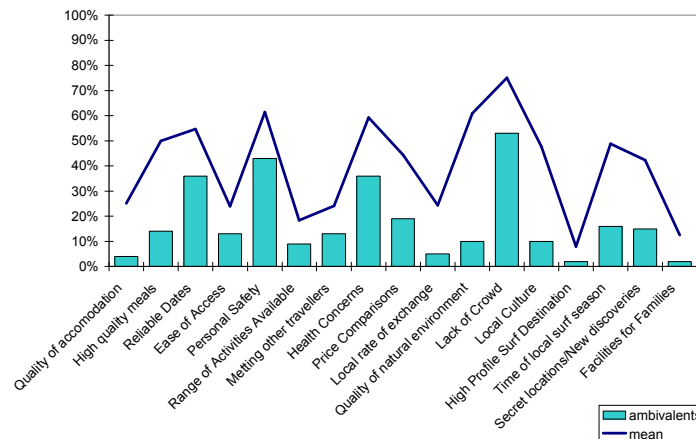ereas the price-conscious safety seekers (P1) represent the oldest group. This is well mirrored in the years of surfing experience, where 37 percent of the latter state that they have been surfing for more than 20 years as well as income with the price conscious safety seekers having the highest and the radical adventurers the lowest.

Regarding surfing ability, only very few members of each segment call themselves "highly advanced", while half of the price-conscious safety seekers (P1), the price-conscious adventurers (P3) and the radical adventurers (P5) regard themselves as "advanced". However, most of the price-conscious adventurers (P3) and the radical adventurers (P5) state that they seek challenging hollow waves whereas most of the price-conscious safety seekers (P1) seeking easy points and reefs. Interestingly, the highest number of "beginner" classifications is also represented in group P1 ("price-conscious adventurers ") with 22% of the group being in this classification. This would suggest that many older surfers (with an average age of 35) have recently taken up the sport.

6. Discussion

Surf tourism has been shown to be a significant and yet under-researched part of the sport tourism market. By identifying specific market segments of surf tourists, companies serving this market will be able to develop strategies that best meet the disparate needs identified. Improvements on the four very general market segments described by Farmer (1992) have been accomplished by using both demographic and psychographic methodologies as suggested by Douvis, Aminuddin and Douvis (1999).

Generally speaking, it can be seen that most surfers prefer wave heights to be in the 4 – 6 foot range, and three of the groups identified (P1, "price-conscious safety seekers", P2, "luxury surfers", and P4, "ambivalents") prefer waves that are easy points or reefs breaks. The significance of this finding is that various surf locations around the world are known to have waves within these height and type ranges at different seasons. Surf tourism companies need to be cognizant of these differences so as to avoid sending clients to either surf destinations, or particular breaks within destinations, that are not within their clients desired wave type category.

Each of the five groups reported that lack of crowds is very important in selecting surf destinations. This lack of crowds present something of a problem common to many tourism destinations, that being that the more popular and crowded it becomes, the less attractive it gets. In the case of surfers, the crowd factor may explained in a competitive sense. Surfers, in order to be in the correct position to catch a wave while in the water, must be in what is known as the take-off zone. This is the area of water above a coral reef, sand bar or other ocean floor feature that creates the breaking wave. Typically, a take-off zone may be as small as a car park space or as large as a tennis court, depending on the conditions of the particular break. The more people that are in the take-off zone waiting to catch a wave, the fiercer the competition is to catch a wave, hence surfers dislike for crowds.

About half of all groups identified prefer travelling with a partner or two to four friends. As safety was important to each group other than the ambivalents (43%) and the radical adventurers (6%), travelling in small groups of other known surfers may be a way of ensuring this, especially while in the water. What is important is for travel companies to realise that small group bookings may make up a large part of the surf tourism market.

The most lucrative market segments identified appear to the price conscious adventurers and the luxury surfers, as these two groups have the highest incomes and are willing to spend the most amount of money on their surf trips. These two groups also have the highest average age of all the groups (35 and 32 years respectively). One of the main differences is that 45% of the price conscious adventurers return to a favourite spot, whereas 46% of the luxury surfers seek surf at new countries and new breaks. This is relevant from a tour operator perspective in that there is value in nurturing relationships with ground operators at specific destinations so that clients such as the price conscious adventurers may return, but to also have a stable of different surf destinations, as well as be on the lookout for new locations, so that segments such as the luxury surfers will book again.

The limitations of the study include the following points: (1) the sample most probably is not representative for the surfer population as a whole, which is due to the fact that it was collected by means of internet survey, (2) the limited number of respondents is a restriction with regard to the methodology applied because the number of dimensions for the partitioning task is extremely high and (3) the data collected did not include the home address of the respondent which would have an impact upon destinations visited in the past. For these reasons, the results of the empirical study should be taken as indicative and hypothesis-generating for further investigations.

Future work thus should necessarily include a replication of this study with a larger sample size. Furthermore, surf tourism should be investigated from many more perspectives. For example, in relation to the demand for this phenomena, more detailed information needs to be gathered in regard to how different groups of surfers perceive the image of various surf destinations so that these destinations may have a better understanding of their points of difference and therefore be able to design more optimal product. Another area of research needs to determine the reasons for, and the numbers of, surfers who choose to buy packaged tours rather than be free independent travellers. From this, better methods of distribution could be attained.

Acknowledgments

Appendix

Table 1: Descriptive analysis of background variables (n = 430)		
Question	Answer categories	Percent
Average Age		30 years
Years Surfing	Less than two years	11
	3-5 years	17
	6-10 years	19
	11-15 years	21
	16-20years	10
	More than 20 years	22
Surfing Ability	Beginner	8
	Intermediate	41
	Advanced	46
	Highly Advanced	5
Preferred Wave size	2-3 ft	10
	4-6ft	60
	6-8ft	27
	8-10ft	3
	10-12ft	0
	12 ft+	1
Travelling Companions	Alone	14
	Partner	17
	Family	10
	1 Friend	19
	2-4 Friends	26
	5 or more friends	7
Length of stay	Less than 2 weeks	55
	2-4 weeks	34
	5-8 weeks	5
	More than 8 weeks	6
Daily budget	Less than $20	15

	$21-$50					37	
	$51-$100					26	
	$101-$200					18	
	$201-$400					3	
	More than $400					2	
Preferred wave type	Fun beach breaks					13	
	Easy points and reefs					46	
	Challenging hollow waves					40	
	Thick, grinding barrels					1	
Regularity	Regularly, more than once per year					40	
	Regularly, once per year					25	
	Regularly once every 2-3 years					11	
	Irregularly					24	
Destination novelty	Return to favourite spot					28	
	New breaks, familiar country					24	
	New countries, new breaks					48	
Movement	Stay in one area					27	
	Move through a variety of areas					73	
Education Level	Yr 10					31	
	Yr 12					21	
	TAFE Certificate					32	
	Trade Certificate					17	
Income	up to $399pw					20	
	$400-599pw					15	
	$600-$799pw					20	
	$800-$1499pw					22	
	More than $1500pw					8	
	MYOB					14	
Sex	Male					93	
	Female					7	

Table 2: Psychographic Variables

Psychographic Variables	Percent of respondents who find it important (n = 430)
Lack of crowd	72
Personal safety	59
Quality of natural environment	58
Health concerns	57
Reliable dates	52
High quality meals	48
Time of local surf season	47
Local culture	46
Price comparisons	42
Secret locations/new discoveries	40
Quality of accommodation	24
Ease of access	23
Meeting other travellers	23
Local rate of exchange	23
Range of activities available	18
Facilities for families	12
High profile surf destination	8

Table 3: Describing and contrasting behavioural segments using background variables

		P1	P2	P3	P4	P5	p-value	p-value (Bonferroni corrected)	95% sign. level	tested using
	Age	35	32	29	28	27	0.000	0.000	sign.	ANOVA
Years Surfing	less than two years	18	4	10	13	10				
	3-5 years	17	18	19	21	11				
	6-10 years	6	14	22	23	24				
	11-15 years	11	26	19	18	32				
	16-20years	11	18	6	8	9				
	more than 20 years	37	21	25	17	15	0.001	0.009	sign.	Chi2
Surfing Ability	Beginner	22	1	4	8	9				

	Intermediate	23	54	37	49	38			
	Advanced	53	40	52	38	48			
	Highly Advanced	2	5	7	4	6	0.000	0.001	sign.	Chi2
Preferred Wave size	2-3 ft	18	4	5	17	6			
	4-6ft	60	73	59	58	50			
	6-8ft	22	22	28	22	39			
	8-10ft		1	7	3	1			
	10-12ft					1			
	12 ft+			1		2	0.001	0.010	sign.	Chi2
Travelling Companions	Alone	11	19	18	10	15			
	Partner	20	25	12	15	15			
	Family	22	6	9	12	1			
	1 Friend	6	18	22	18	30			
	2-4 Friends	26	24	25	27	29			
	5 or more friends	8	6	9	9	4	0.007	0.098	n.s.	Chi2
Length of stay	Less than 2 weeks	68	51	49	57	52			
	2-4 weeks	26	38	40	30	32			
	5-8 weeks		5	8	6	6			
	more than 8 weeks	6	6	3	7	10	0.249	3.487	n.s.	Chi2
Daily budget	less than $20	12	6	19	18	18			
	$21-$50	22	28	46	39	41			
	$51-$100	32	33	14	25	28			
	$101-$200	28	22	17	13	12			
	$201-$400	6	5	3	3				
	More than $400		5	2	2		0.002	0.025	sign.	Chi2
Preferred wave type	fun beach breaks	18	20	8	17	6			
	easy points and reefs	45	57	40	49	39			
	challenging hollow waves	37	22	52	34	52			
	thick, grinding barrels		1			2	0.001	0.009	sign.	Chi2
Regularity	Regularly, more than once per year	23	48	40	42	44			
	Regularly, once per year	26	16	25	25	32			
	Regularly once every 2-3 years	8	19	10	10	9			
	Irregularly	43	17	25	21	16	0.006	0.087	n.s.	Chi2
Destination novelty	Return to favourite spot	45	32	23	25	19			
	New breaks, familiar country	18	22	32	21	26			
	New countries, new breaks	37	46	45	54	56	0.015	0.210	n.s.	Chi2
Movement	Stay in one area	43	34	27	20	13			
	Move through a variety of areas	57	66	73	80	88	0.000	0.004	sign.	Chi2
Education Level	Yr 10	28	20	35	39	29			
	Yr 12	15	23	15	23	27			
	TAFE Certificate	29	25	40	25	38			
	Trade Certificate	28	32	10	13	6	0.000	0.000	sign.	Chi2
Income	up to $399pw	3	11	24	25	30			
	$400-599pw	9	7	22	15	18			
	$600-$799pw	18	23	16	22	23			
	$800-$1499pw	43	30	22	14	10			
	more than $1500pw	15	10	4	8	6			
	MYOB	11	19	14	16	12	0.000	0.000	sign.	Chi2
Sex	Male	86	93	99	88	96			
	Female	14	7	1	12	4	0.005	0.070	n.s.	Chi2

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