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Behavioural market segments among surf tourists - investigating past destination choice

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Abstract

Surf tourism is of major importance to the tourism industry. Nevertheless, very few investigations of the surf tourism market exist. This paper extends the work by Fluker (2003) and Dolnicar and Fluker (2003) by investigating surf tourists from a behavioural perspective with the main aim of the study being to gain an insight into the travel patterns of the surf tourism market. This is achieved in an empirical way by using unsupervised neural networks to partition a group of surfers into homogeneous segments based on their past surf destination choice. This binary information was gathered by means of an online survey, which asked respondents questions indicating whether or not they have ever surfed in particular places. In addition, descriptive information is included in the data set and is divided into “surf related questions”, “personal characteristics” and “travel behaviour”. It was found that based on past destination choice, six market segments could be described, each with significantly different ages, surfing ability, length of stay, preferred wave type, and regularity of undertaking surf trips. The results of these finding have implications for both surf destinations and the tourism industry that facilitates the experience.

Keywords

Surfing, tourism, segmentation, destination

Disciplines

Business | Social and Behavioral Sciences

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BEHAVIOURAL MARKET SEGMENTS AMONG SURF TOURISTS – INVESTIGATING PAST DESTINATION CHOICE

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ABSTRACT

Surf tourism is of major importance to the tourism industry. Nevertheless, very few investigations of the surf tourism market exist. This paper extends the work by Fluker (2003) and Dolnicar and Fluker (2003) by investigating surf tourists from a behavioural perspective with the main aim of the study being to gain an insight into the travel patterns of the surf tourism market. This is achieved in an empirical way by using unsupervised neural networks to partition a group of surfers into homogeneous segments based on their past surf destination choice. This binary information was gathered by means of an online survey, which asked respondents questions indicating whether or not they have ever surfed in particular places. In addition, descriptive information is included in the data set and is divided into "surf related questions", "personal characteristics" and "travel behaviour". It was found that based on past destination choice, six market segments could be described, each with significantly different ages, surfing ability, length of stay, preferred wave type, and regularity of undertaking surf trips. The results of these finding have implications for both surf destinations and the tourism industry that facilitates the experience.

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INTRODUCTION

The sport of surfing and the act of travelling are two behaviours well suited to each other. 'Searching for the perfect wave' is a creed shared by many in the surfing community and describes the willingness of surfers to undertake travel experiences so that they may ride these waves. Nat Young (1983:189) referred to surfers as being "a unique tribe of nomads who have wandered this planet in search of rideable waves". These early surfing explorers have since opened up surfing destinations around the globe such as Bali, the Mentawai Islands, Fiji, the Maldives, Tahiti and South Africa to name just a few. It is suggested that the surfers of today still travel to locations such as these, but for varying lengths of time, having different economic impacts, and are in search of different experiences. As surf tourism has evolved, so too have the types and ever increasing numbers of surf tourists.

Can contemporary surf tourists be better understood based on past destination choice, so that they may be attracted more effectively by surf destinations, leading to both increased profit for the local tourism industry and an improved tourists experience due to a better match of surfer expectations and destination offers made? This is the research problem this paper will address. More specifically, the aim of this paper is to determine whether homogeneous subsets of surf tourists can be identified or constructed based on the information, which destinations individual surfers have visited in the past. If this is possible and if such homogeneous subsets are distinctly different from each other with regard to descriptive characteristics as well, surf destinations can choose to focus on particular segments which they can serve best.

The definition of surf tourism underlying this piece of research was suggested by Fluker (2003:7) as:

> Surf tourism involves 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 takes into account the understanding that surfing is indeed a sport as opposed to being a "form of play or game" (Farmer,1992:242). The basis of this argument is that for an activity to be considered a sport, it must meet the three criteria of challenge, conditions imposed and response to the challenges and conditions (Haywood, 1994; Standeven and De Knop, 1999). Surfing meets these criteria in that purposive interaction of the participant with the natural environment, where the outcome of the activity rather than competition, is of prime importance (Fluker, 2003:6).

The definition also recognises that as these surfers are travelling for a period of time of at least one night and not more than 12 months, they can be regarded as either a domestic or international tourists. It should be noted that some of these surf tourists may be free independent travellers who organise their travel itinerary themselves and pay for services of providers such as airlines and accommodation outlets directly, while others rely on the indirect services of tour operators or retail travel agents to make these arrangements. While it is beyond the scope of this paper to investigate the ratio of these two groups, the findings should be of relevance to both ground operators as well as intermediaries in the travel distribution system.

It should also be noted that surf tourism does not necessarily only include active surfing participants, but also spectators and non-surfing travel companions. For example, McGrath (2002) reported that one of the aims in constructing the artificial surf reef at Narrow Neck in Queensland (Australia) was to attract tourists who could park nearby and simply watch the surfers. Dolnicar and Fluker (2003:11) found that less than one fifth of surfers travelled alone (based on a convenience sample, so the percentage should be interpreted with caution), suggesting that many surfers travel with either friends, partners or family members who may of may not themselves be surfers. While these ancillary surf tourists may offer opportunity for the travel industry to provide experiences, the focus of this paper is on the past destination choice of the actual surfers who creates the activity.

PRIOR RESEARCH INTO SURF TOURISM

Prior research into surf tourism generally and descriptions of the market specifically, has been sparse. Poizat-Newcomb (1999) gives a largely historical and anecdotal account of surfing as a sports tourism activity in Puerto Rico but stops short of giving detailed and empirical descriptions of the surf tourism market. Farmer (1992) describes the motivations, values and culture of surfers in California, but uses a non-representative small sample size of 50 recreational surfers (Farmer, 1992:245). Of recent relevance to the specific research problem stated in this paper are the two papers by Buckley (2003) that consider the commercial surf tourism industry and carrying capacity issues to do with surf tourism in the Indo-Pacific Island region. These papers have been valuable in demonstrating "that surf tourism has become a social phenomenon of sufficient economic, social and environmental significance to justify academic attention" (Buckley, 2002:406). Indeed Buckley estimates the economic scale of the surfing industry, including travel, surf-branded clothing and the manufacture of surfboards, to be in the order of US$10 billion per annum and that there are some 10 million surfers worldwide (Buckley, 2002:407). The main value of the two Buckley papers is that they clearly describe the structure of the surf tourism industry in terms of the impacts caused to natural and cultural host environments, the distribution of the product, the main issue facing the industry (capacity management) as well as a general description of the market.

Understanding the market for surf tourism is essential in designing and distributing surf tourism product via the existing travel industry in a way that is going to best meet the needs of the market. An Australian based tour operator named the Surf Travel Company sent 2,450 surfers to various surf locations around the world in the year 2002. It may be that as the sport of surfing matures, elements of the demographic profile of these surfers has also changed from the stereotypical 1970's surfer whom Pearson (1979:59) describes as being "individualistic, independent, hedonistic, casual, anti-establishment, introverted, opposed to discipline or control over individual freedoms, slim physique – wearing board shorts on the beach and casual clothes away from the beach, have unconventional attitudes towards drugs, gather and surf in small groups and are very mobile in their search for surf". A more contemporary portrayal of surf tourists is provided by Dolnicar and Fluker (2003). They analysed the demographic and psychographic characteristics of 430 surfers. It was found that 42% of this male dominated group (only 7% were female) had a relatively high weekly income of between $AUS600 to $AUS1,499 and an average age of 30 years, but were still found to be very mobile in their search for surf. However, as mentioned before – and as it seems to be the case with all empirical studies into surf tourists - the respondents were convenience-sample based, which implies that the precentages have to be interpreted with caution.

In addition, Dolnicar and Fluker (2003) constructed surfer market segments based on the importance rating respondents stated to various surf destination attributes such as lack of crowds, level of personal safety and the quality of accommodation available at the surf destination. A solution with five groups of surfers was chosen (the price-conscious safety seekers, the luxury surfers, the price conscious adventurers, the ambivalents, and the radical adventurers). The most lucrative of these markets segments were the luxury surfers and the price conscious safety seekers as they spend the most on their trips with over half of them spending between AUS$50 and AUS$200 per day. Common attributes across all groups were personal safety and lack of crowds. Crowds present a great deal of frustration for many surfers and may indeed account for their willingness to travel in search not only of the perfect wave, but also the uncrowded wave.

This current study builds upon this work by using the same data set, but this time investigating past destination visitation patterns as a segmentation base. This is assuming that past choice would be a relevant criterion for the division of surfers into homogeneous market segments.

BEHAVIOURAL MARKET SEGMENTS

The data set consists of 430 respondents who completed an online-survey placed on the internet by the Surf Travel Company, a Sydney based travel agent specializing in surf travel. One block of questions centres on the surf destinations these surfers have visited in the past. This multivariate binary information on the travel behaviour of surf tourists is used as a starting point for the segmentation study.

The "destination questions" consist of 30 yes or no statements with regard to whether the surfer has surfed at the following destinations listed in the questionnaire: Bali, Central Sumbawa, Central/South America, Fiji Islands, Garajagan, Hawaii, Hinako Islands, Lombok, Maldives, Mentawai Islands, Nias, North America, North Coast New South Wales, North Western Australia, Nusa Lembongan, Other Indonesia, Other Java, Philippines, PNG, Queensland, South Africa, South Australia, South Western Australia, Sumatra, Tahiti, Telo Islands, Timor/Sumba, Tonga, Victoria and West Sumbawa. These destinations were chosen because they represent the most popular destinations based on trip booking statistics of The Surf Travel Company.

In addition to this behavioural information, background information on the respondents was also collected. This included surf related questions, personal characteristics and travel behaviour. Examples of surf related questions are the preferred wave size ranging from 2 – 3 feet through to 12 feet plus, and preferred type of wave which are categorised as either 'fun beach breaks', 'easy points and reefs', 'challenging hollow waves' or the most dangerous 'thick grinding barrels'. Other surf related questions included the regularity of surf travel undertaken, the surfing ability and the number of years the surfer had been involved in surfing. Personal characteristics include education and income level as well as age and sex. The category of 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 background information variables are used to further describe the homogeneous groups of surf tourists after the actual segmentation analysis has been conducted, thus providing the tourism industry with a more detailed understanding of the surf tourist market.

METHODOLOGY

Unsupervised neural network algorithms were used to partition the empirical data set in order to derive homogeneous sub-groups of consumers. In general, such neural network procedures function in the following manner: First, the number of segments to be revealed (Frank, Massy and Wind, 1972; Myers and Tauber, 1977) or constructed (Mazanec, 1997; Wedel and Kamakura, 1998) has to be defined. Next, starting vectors have to be chosen where the number of starting vectors (or prototypes) is equal to the number of segments and the dimensionality equals the number of variables (items, questions) used as the basis of segmentation. These starting vectors can be randomly picked from the data set or could be the results of prior analysis. From here an iterative partitioning process is initiated: one case (the answer pattern of one respondents with regard to all variables included) is presented to the network. The closest prototype is computed, declared to be the "winner" and allowed to adapt its vector values towards the values of the case presented to a predefined extent ("learning rate"). In addition to this winner, one or more neighbours of the winner are also 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 neighbourhood relationship is also mirrored. This adaptive procedure as 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 occurs, at the end only fine tuning of the solution takes place. 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.

As compared to the most popular partitioning algorithm (Baumann, 2000; Dolnicar, 2002) for segmentation studies, *k*-means, unsupervised neural networks allow for neighbourhood learning that leads to topological arrangement along a predefined rectangular grid. Starting points 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. Software freely available at the homepage of the Institute of Tourism and Leisure Studies at the Vienna University of Economics and Business Administration (http://charly.wu-wien.ac.at/software/) was used.

RESULTS

Computations with segment numbers ranging from three to ten were conducted. All cluster numbers rendered similar stability results on the basis of 50 repetitions. Six segments were chosen because they represented a useful compromise between a too rough grouping with sufficiently large clusters compared to a very detailed grouping with too few members to describe. Also, the six segment solution can be represented in a two dimensional SOFM grid. For this purpose, a grid with two columns and three rows was chosen as spatial representation.

The resulting segmentation solution is provided in Figure I, where each bar chart represents one segment. The bars give the percentage of segment members that state to have already surfed this particular destination. The line provides reference to the mean score of the total sample (430 surfers) surveyed. Deviations from this line thus can be interpreted as being characteristic of a specific segment.

As can be seen from the profile charts, the segments derived from this high-dimensional database are surprisingly distinct. Behavioural segment number 1 (B1) has a very strong focus on Indonesia as surf destination and includes 10 percent of the respondents (however, the percentages should be interpreted with care, as the internet survey procedure used is unlikely to have resulted in a representative sample of surfers). B2-members (24 percent of the sample) are above average in stating to have been surfing in American destinations. The segment B3 (8 percent) is characterised by a combination of Western Australian and Indonesian destinations. B4 (16 percent) represents a group of surfers that almost only surfs Australia (besides Australian destinations only the Philippines are mentioned by this segment more often than by the average). Surfers assigned to B5 (17 percent) state to have surfed anywhere in the world more often than the average. This of course might either be true or an answer tendency, which unfortunately the authors cannot determine *ex post*. Therefore, the segment should be interpreted with care. Finally, B6-surfers (25 percent) have so far surfed in Queensland and the north coast of New South Wales, and thus represent a second group of Australia-surfers.

---------- Insert "Figure I: Behavioural surfer segments" here ----------

The arrangement within the grid mirrors geographical preferences of the behavioural segments. The top left region is Indonesia-centred, the top right prototype represents the America-surfers and the bottom right region is strongly Australia-focused.

In addition to the segmentation base, descriptive information was available in the data set, which is used to further describe the segments and investigate whether the grouping chosen actually represents distinct groups. As can be seen in Table I, a number of significant differences between the behavioural surfer segments can be revealed. Table I includes (except for age) the percentages of all groups for the descriptive variables used, the p-value of the statistical tests applied, which is stated in the last column, the Bonferroni-corrected significance value accounting for the fact that a number of tests was conducted on the basis of the same data set and one column stating whether the result can be considered as significant at the 95 percent significance level.

The average age varies significantly from 27 to 33 years, with surfers in groups B2 (American breaks) and B5 (surf breaks worldwide) representing the oldest groups. Also, the years of surf experience significantly distinguish the behavioural segments: again, the B2 and B5 groups have the most experienced surfers, whereas the surfers visiting Indonesia and Western Australia (B3) as well as the NSW/Queensland (B6) group are least experienced, although this is not significantly mirrored in their self assessment of surfing ability.

There are no significant differences in the preferred wave size among all the surfers with most preferring them to be between four and six feet high. However, there are significant differences in the type of wave preferred, as it is apparent that groups B2 (America) and B6 (Queensland and New South Wales) prefer fun beach breaks when given the choice of four wave types. These types of waves usually present low levels of risk as they are typically formed on smooth sand bars as opposed to the more dangerous sharp and hard coral or rock reefs often found with challenging hollow waves. It can be seen that these challenging hollow waves are preferred most by the B1 (Indonesia) and B5 (surf breaks worldwide) groups.

With regard to the length of stay, Indonesia-surfers (B1) stay the longest: 23 percent of them state to stay between 5 and 8 weeks. The America-surfers (B2), the Indonesia and Western Australia segment (B3) as well as the NSW/Queensland group (B6) have the shortest lengths of stay with about two thirds staying less than two weeks.

Further significant criteria of distinction include the regularity of undertaking surf trips, the interest in destination novelty, education level, income and gender. No significant differences in the number of travelling companions surfers go with (between 1 and 4 persons), daily budget (mostly between AUD$21 and AUD$100 per day), degree of movement within a destination (most move to a variety of areas) and gender (males account for between 90 and 98 percent of all groups).

---------- Insert "Table I: Describing and contrasting behavioural segments using background variables" here. ----------

CONCLUSIONS

The purpose of this paper was to determine if surf tourists could be better understood by revealing or constructing segments of surf tourists with homogeneous patters of past destination choice to the benefit of both the surfers (whose needs could better be catered for) and the tourism industry (that could increase profit from attracting more surf tourists form a particular segment or from higher numbers of repeat visitors).
Six behavioural segments were constructed that demonstrate distinct profiles. This knowledge can be used in strategic marketing initiatives. For example, surfers such as those represented in the B1 group (Indonesia), may be more likely to undertake self-organised surf trips as free independent travellers. Their involvement with elements of the tourism industry would perhaps be limited to booking flights and other transportation requirements. Reasons for this include the fact that these people travel for surf on a regular basis, so they are going to be very knowledgeable about various destinations either from word of mouth or their own research. While they spend a similar amount of money per day compared with other groups, but they stay longer, with 23 percent of the segment members staying between 5 and 8 weeks. Thus, the total expenditures of this group make it a highly attractive market segment to target. Regional tourism authorities, such as those in under-represented destinations in the South-Pacific such as Fiji or Tonga, need to consider and promote their natural resources such as wave type and size in order to attract this market.

The length of stay for all other groups was mostly less than 4 weeks, with some groups such as B2 (America), B3 (Western Australia and Indonesia) and B6 (Queensland and New South Wales) preferring trips of less than 2 weeks. This is most likely to be the length of time these people can take off work for a dedicated surf holiday. Tour operators need to design surf tours that create a good in terms of this time frame, but also in terms of the type of waves that are available in certain destinations. For example, most (64%) of the B3 group (Western Australia and Indonesia) prefer easy points and reefs. It would not be wise to offer them packages to locations known either for fun beach breaks or thick grinding barrels. Indeed, it would be unwise to offer any packages offering thick grinding barrels, as very few of the 430 surfers selected this as their wave of choice. One opportunity that does exist is to present current surf tourism customers tours to new destinations, as nearly half of all groups are interested in going to new countries and seeking new breaks.

The limitations of the study are twofold: (1) the sample is probably not representative of the surfer population as a whole, which is due to the fact that it was collected by means of internet survey, and (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: a grouping of 430 respondents in a thirty dimensional space represents a very rough method of partitioning. For both these reasons the results of the empirical study should be taken as indicative and hypothesis-generating for further investigations. Therefore, future work should include a replication of this study with a larger sample size and include the investigation of surf tourist heterogeneity with regard to criteria other than destination choice as well as an integrated taxonomy-development of surfers based on multiple sets of criteria. In addition, the competitive relationship between destinations would be an interesting area of further investigation.

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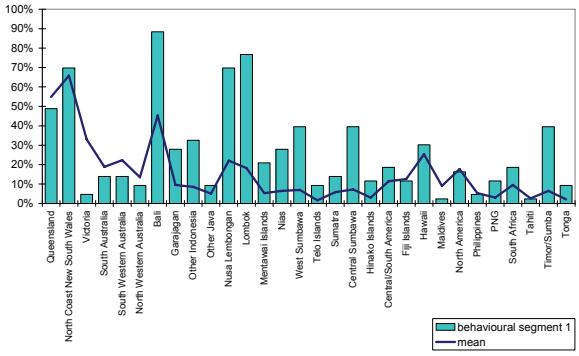
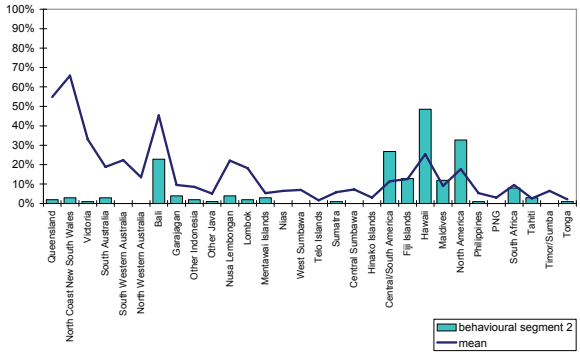
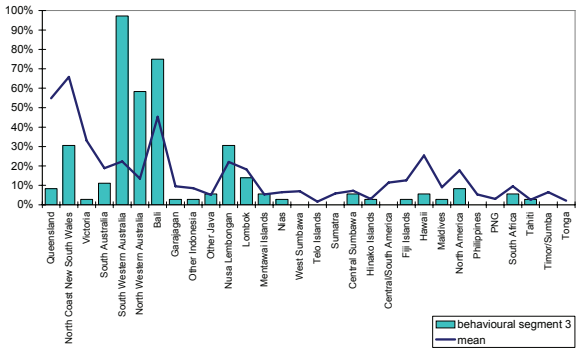
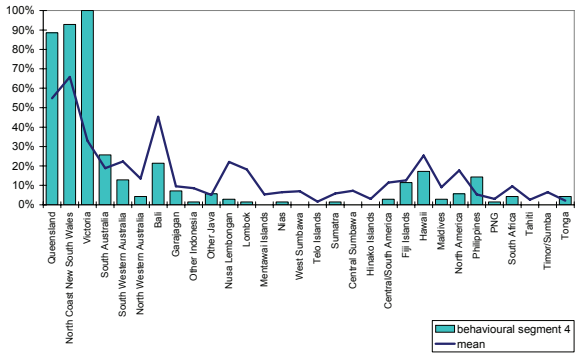
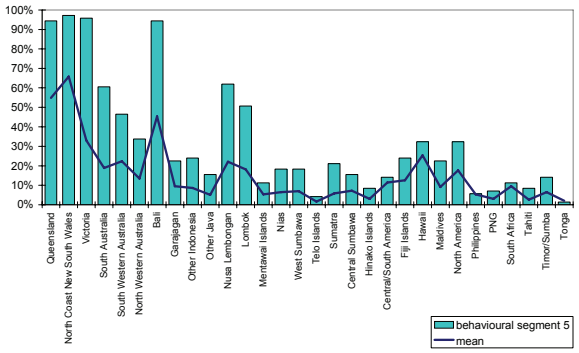
Figure I: Behavioural surfer segments











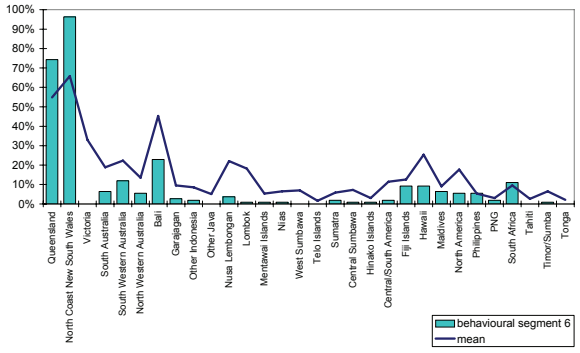


Table I: Describing and contrasting behavioural segments using background variables

		B1 Indonesia	B2 America	B3 WA/Indonesia	B4 QLD/NSW/VIC	B5 All Over	B6 Qld/NSW	p-value	p-value (Bonferroni corrected)	95% sign. level	Tested using
Age		27	33	27	27	33	29	0,000	0,000	sign.	ANOVA
Years Surfing	Less than two years	7	12	8	11	4	16				
	3-5 years	9	27	25	24	4	13				
	6-10 years	26	8	28	20	10	28				
	11-15 years	23	14	17	13	37	24				
	16-20years	19	9	8	14	10	5				
	more than 20 years	16	31	14	17	35	15	0,000	0,000	sign.	Chi2
Surfing Ability	Beginner	7	7	17	6	1	12				
	Intermediate	47	40	42	44	30	46				
	Advanced	42	46	36	47	65	37				
	Highly Advanced	5	6	6	3	4	6	0,086	1,201	n.s.	Chi2
Preferred Wave size	2-3 ft	5	13	17	7	3	13				
	4-6ft	49	54	64	69	58	63				
	6-8ft	35	31	19	21	35	20				
	8-10ft	9	1			4	4				
	10-12ft		1								
	12 ft+	2			3			0,020	0,276	n.s.	Chi2
Travelling Companions	Alone	19	12	17	19	13	13				
	Partner	12	23	11	23	14	13				
	Family	5	11	3	10	11	11				
	1 Friend	23	19	36	20	17	14				
	2-4 Friends	30	21	31	14	32	32				
	5 or more friends	12	7	3	4	13	6	0,012	0,174	n.s.	Chi2
Length of Stay	Less than 2 weeks	12	64	69	45	46	70				
	2-4 weeks	56	29	22	39	42	24				
	5-8 weeks	23	2	6	6	4	2				
	More than 8 weks	9	5	3	10	7	5	0,000	0,000	sign.	Chi2
Daily Budget	Less than $20	7	21	11	13	10	19				
	$21-$50	63	28	42	40	34	32				
	$51-$100	23	23	25	21	32	28				
	$101-$200	7	22	19	21	15	17				
	$201-$400		5	3	4	6	1				
	More than $400		2			3	4	0,067	0,939	n.s.	Chi2
Preferred Wave Type	Fun beach breaks	2	19	17	9	7	19				
	Easy points and reefs	30	49	64	47	41	46				
	Challenging hollow waves	67	33	19	41	52	34				
	Thick, grinding barrells				3		1	0,000	0,004	sign.	Chi2
Regularity	Regularly, more than once per year	40	34	58	37	59	30				
	Regularly, once per year	33	27	19	21	30	20				
	Regularly once every 2-3 years	19	11	8	10	8	11				
	Irregularly	9	28	14	31	3	38	0,000	0,001	sign.	Chi2
Destination Novelty	Return to favourite spot	21	24	25	29	14	42				
	New breaks, familiar country	30	19	33	20	31	23				
	New countries, new breaks	49	57	42	51	54	35	0,003	0,048	sign.	Chi2
Movement	Stay in one area	21	28	26	36	16	28				
	Move through a variety of areas	79	72	74	64	84	72	0,131	1,828	n.s.	Chi2
Education Level	Yr 10	28	38	36	24	15	39				
	Yr 12	19	8	36	27	28	19				
	TAFE Certificate	40	39	8	36	34	26				
	Trade Certificate	14	16	19	13	23	17	0,001	0,010	sign.	Chi2
Income	Up to $399pw	28	20	31	21	3	23				
	$400-599pw	16	14	25	10	17	14				
	$600-$799pw	26	21	17	20	24	17				
	$800-$1499pw	21	15	17	24	23	30				
	More than $1500pw		13	6	1	18	6				
	MYOB	9	18	6	23	15	10	0,000	0,006	sign.	Chi2
Sex	Male	98	90	92	96	94	91				
	Female	2	10	8	4	6	9	0,485	6,786	n.s.	Chi2