

## DIFFERENCES IN MOTIVATIONS AND EXPECTATIONS OF DIVERS IN THE FLORIDA KEYS

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**Abstract:** The adventure tourism market has grown steadily in recent years along with the number of certified SCUBA divers. With the increase of divers, the need for satisfying experiences, marketing strategies, and knowledge of the dive market in general arises. This study tested differences in motivations and expectations of SCUBA divers in the Florida Keys, to identify target markets for better programming and marketing. A gap analysis was used to test for differences between Boy Scouts diving with the Florida National High Adventure Sea Base, international, and regular US divers (n=300) diving with one of four commercial dive centers or with Sea Base, summer 2002. Diver level of development was a primary independent variable using nonparametric tests for a nonprobability sample to examine differences between skill level groups. Eighteen expectation variables in a pre/post test format were used to test the extent expectations had been met. Largest differences were between Scouts and regular US divers and between different levels of diver development. Differences in motivations were found between the Scouts and regular US divers among 12 of 28 motivation items as well as among diver skill level. Scouts were the most satisfied with their experience, and motivated to dive for adventure and excitement. Beginning divers mostly dove for challenge and excitement while more advanced divers dove to be with similar people, use their equipment and see shipwrecks. Implications for commercial dive operations to improve diver preparations are given.

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### Introduction

This study focuses on motivation and expectations

for adventure tourism, a growing segment of outdoor recreation. Travel and Tourism Analyst (Market Segments, 1992, p. 38) defines an adventure holiday “as one that contains an element of personal challenge, through controlled risk, daring and/or excitement, often in an inaccessible (wilderness) environment.” SCUBA fits this definitional context and has seen a major rise in popularity with the growth of adventure activities. According to the Professional Association of Diving Instructors (PADI) there are 8.5 million divers in the United States and most of them must travel away from home to find a nice pristine diving environment.

Perceived freedom and intrinsic motivation are central defining elements of any leisure activity. Neulinger (1974, p. 38) defined perceived freedom as “a state in which the person feels that what he or she is doing is done by choice and because he or she wants to do it.” Intrinsically motivated behaviors are based on “innate psychological needs” for self-determination and competence. Meanwhile, there are push and pull factors motivating people to do certain activities (Crompton, 1979). Pull factors are destination related and refer to tangible characteristics such as accommodation, attractions, the beaches, and so on. Push factors are origin related and refer to intrinsic motives such as the desire for escape, rest and relaxation. Motivation between divers of different stages of development was measured in Todd, Graefe, & Mann’s (2001) study of divers in the New York Great lakes. Their study showed significant differences among stages of diving development and diver motivations for diving, thus we used Todd et al.’s stage of diving development variable in this study.

According to Mannell (1997), leisure satisfaction can be motivation or evaluation based. In this study satisfaction is conceptualized as closely tied to motivation. Participants of scuba diving are expected to be satisfied when they meet or satisfy certain leisure needs and motives by engaging in scuba diving. Research by Oliver (1980), Churchill & Suprenant (1982) and others show that expectations by influencing perceived performance had a direct impact on customer satisfaction. Past research findings confirm that levels of satisfaction can vary according to country of origin. Danaher and Arweiler (1996), although having a small

sample size, found differences in level of satisfaction with outdoor recreation activities between four different nationalities visiting New Zealand. In sports and recreation, literature has also identified participant skill level as an important indicator of satisfaction and importance of the activity. Skill is defined as a function of ability, experience and learning. Using Csikszentmihalyi's terminology (1982), challenge and the ability to handle challenge can significantly influence satisfaction derived from the activity. It is anticipated that motivations stem from the urge to fulfill certain needs, and that participants of different countries of origin, who participate in scuba diving have different expectations of the services designed to satisfy those needs. Thus, we used nationality as a category in our group type variable to check for differences between international and divers from the US.

Turner and Fluker (2000) found that expectations were significantly different for participants in a commercial whitewater rafting experience with and without prior experience. They found that participants without prior experience expected to get an adrenaline rush, go down big rapids, get cold, and be challenged. Findings show that participants with prior rafting experience did not expect this thrill but rather to meet new people, to be in nature and to enjoy themselves. Their expectations were found to be more realistic of people's expectations. Anderson, Fornell, and Lehmann (1994) describe how customer expectations are adaptive and change according to levels of previous experience and other information. Schreyer and Roggenbuck (1978, p. 377) identify five main points in expectancy research:

- People have a variety of expectations for participating in recreation activities;
- Expectations for participating in one activity are usually different from participating in another activity;
- People who engage in the same activity sometimes seek different outcomes; and
- Antecedent conditions such as demographics, socio-economic and environmental variables seldom by themselves predict the motivations of recreationists.

Turner and Fluker (2000) examined differences between before rafting expectations and the degree

expectations were met after rafting. A confirmation/disconfirmation framework was used to guide their investigation distinguishing gaps between motives, expectations and satisfaction with the outdoor activity experience. Their theoretical framework was applied in Meisel's (2003) master's thesis, the source and inspiration for this paper.

### **Purpose**

The purpose of this study was to increase understanding of diver sociodemographics, previous dive experience, and their motives and expectations for diving in the Florida Keys. More specifically, the relationship between group type (Boy Scout, regular US and international) and stage of diver development (beginner, intermediate, advanced, expert, and post expert) were examined for differences in motivation and expectations for diving. Implications for diver education and target marketing for dive operators in the Florida Keys are sought. Confirmation/disconfirmation gap analysis adapted from Turner and Fluker (2000) was the theoretical framework used to guide this investigation.

### **Methods**

A pre and posttest survey was completed by scuba divers before and after diving in the Florida Keys, summer 2002. Rotating between three commercial dive centers in the Florida Keys and the Boy Scout Sea Base, the researcher conducted surveys with 300 divers. All four dive operators chosen had two boats running on a daily basis. The boats hold approximately 30 to 40 passengers with a range of 10 to 25 divers per trip. Sampling was non-random and convenience based. The non-probability sample consisted of Boy Scouts, national and international divers diving in the Florida Keys while on vacation. Members of the Boy Scouts of America participating in the Florida High Adventure Sea Base scuba program formed one group. This group represents a homogeneous sample of white middle class youth between the ages of 13-18 attending Sea Base in groups of eight for one week diving in the Florida Keys. Their diving schedule was very structured and organized under the guidance of dive masters and instructors in the context of a diver educational training program. Divers visiting the Keys either on a packaged dive trip or on an individual dive vacation make up the other two groups who were diving with one of four dive operators in Key West,

Key Largo, or Islamorada, Florida. The Florida Keys was the location selected for the study since the area plays host to the third largest reef system in the world and the BSA Florida Sea Base was interested in sponsoring a study of diver motivations and expectations for diving. The researcher went on the dive boats on a regular basis in June and July rotating between the three dive centers. After an introduction from the dive master the researcher introduced herself and explained the survey. On the boat ride to the dive site divers completed part one (including demographics, environmental attitudes, expectation items) of the survey. When finished they initialed the survey and returned it to the researcher who kept it until the boat ride back. On the return trip, the researcher passed out the surveys again for the divers to complete part two including motivations and satisfaction confirmation/disconfirmation items.

Twenty-eight leisure experience preference items were drawn partly from the Recreation Experience Preference Scales - a standardized inventory (from Driver et al., 1991) and from Todd et al.'s (2001) study of divers. The items offer the advantage of easy comparison with other studies and across different populations. Using a five-point scale, 18 expectation variables (adapted from Turner & Fluker, 2000) ranging from not at all important to extremely important, measured the importance of each item to divers. Satisfaction was measured using a post event evaluation, according to the expectations stated before engaging in the activity. The same 18 expectations were restated in past tense asking if and to what extent expectations were met. It is assumed that expectations not met will result in decreased satisfaction, hence a decreased likelihood of return visits. On the other end of the spectrum a surpassed expectation will result in increased satisfaction. Thus, a satisfaction scale was not necessary since satisfaction was measured using confirmation/disconfirmation of expectations.

Sociodemographic and diver experience variables provided a descriptive profile of the divers. Mean rank scores of the different needs and motives were compared between divers of different sub groups using Kruskal Wallis Test, non-parametric test equivalent to one-way analysis of variance. A paired T-test was used to examine the gap between

expectation and satisfaction items for diving via the Statistics Package for the Social Sciences (SPSS).

## Results

Of the 312 surveys administered, 12 were unusable since part 2 was missing. This was due to seasick divers from rough seas reducing the sample to 300. Of the divers approached aboard the dive boats chosen for the study hardly any refused to participate in the survey. Approximately 97% of the divers selected completed the survey. The high response rate might be because the survey was administered on the boat trip to and from the dive sites, when the divers had ample time to fill out a ten-minute survey. Also the researcher was present on all of the boats to introduce the project and answer any questions. Dive boats were chosen from different commercial dive operators throughout the Keys and the Florida National High Adventure Sea Base. The set up was nonrandom and convenience based and dive boats were selected with no particular pattern intended.

A diver profile revealed that 51% of all divers stayed in the Florida Keys for the sole purpose of diving followed by 20% of divers who were also vacationing and 11% who were doing business in the Keys while also wanting to vacation. 96% of these divers were certified. Twenty-six percent of the sample was diving with the Boy Scouts, 69% divers from the US on vacation, and 5% international (Table 1). The average age was 33, but the Boy Scout divers in the sample skewed the average slightly lower. The age range was 13 to 64 (minimum age for certification is 12). Seventy-eight percent of all divers were male.

**Table 1. — Frequencies of Independent Variables**

Dive group type	N	%
Regular US divers	206	69
Boy Scouts	78	26
International divers	16	5
Total	300	100
Diver Level of Development		
Beginner	75	25
Intermediate	117	39
Advanced	69	23
Expert	28	9
Post expert	10	3
Total	299	100

Divers were mostly diving with friends (30%), family (24%), dive buddies (13%), or family and friends (9%). Number of dives ranged from none (Boy Scout divers learning to dive) to 5000 and 80% of them had been diving between 2 and 18 years. A more detailed discussion of diver background variables was presented in another paper at the NERR 2003 conference (see Cottrell & Meisel, 2003).

When the entire sample (Table 2) was taken into consideration, the top motive turned out to be: “for fun”, followed by “to look at underwater animal and plant life” and “to explore things.” The least important motives were: “because of the risk involved” and “because it’s sort of an impressive thing to do.”

**Table 2. — Mean scores for diving motivation items (n=300)**

Motive	Mean
For Fun	4.53
To look at underwater animal and plant life	4.47
To explore things	4.39
Because its stimulating and exciting	4.33
To create an experience I can look back on	4.26
For the adventure of it	4.25
For a change from everyday life	4.08
Because of the sense of discovery involved	4.02
To experience the tranquility here	3.99
To learn more about the underwater environment	3.99
To be with similar people	3.81
To forget the pressures of my daily work	3.81
To develop my diving skills and knowledge	3.68
To be with my friends/family	3.64
For relaxation	3.64
To see shipwrecks	3.32
Because I think there is a lot of action here	3.27
To take pictures	3.26
To keep fit	3.13
To meet new people	3.11
Because I think it will be a challenge	3.08
To study underwater geological formations	3.07
To share my diving skills and knowledge	2.58
To use my equipment	2.45
To show myself that I can do it	2.27
For a chance to control things	2.05
Because its sort of an impressive thing to do	1.98
Because of the risk involved	1.85

Values based on a 1-5 scale: 1= strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

Table 3 shows expectations ranked in the order of highest to lowest importance, along with the post event variables of the before stated expectations, hence the extent to which the expectation was met. Looking at mean expectations the following variables turned out to be the most important for the entire sample: “I will have fun,” “The equipment will be good,” “I will see some nice fish.” The least expected variables for the soon to be had dive experiences were: “I will get scared,” “I will take risks,” and “I will get cold.” Two things are interesting to note here. The highest expectations correspond with the most important motivations in Table 2. For satisfaction, “staff was friendly” was the highest ranked followed by “I did not get injured.” The items scoring least in satisfaction were the challenge related items (challenge, took risks, got cold and got scared). However, these same items scored lowest in expectations as well. Overall, divers were extremely satisfied with their experience, staff, and the value they got, even though prices are quite high for diving.

Divers level of development was measured by a single measure (Table 1), where respondents characterized their level of diving development. Twenty five percent characterized themselves as beginner, 39% intermediate, 23% advanced, 9% expert, and 3% post-expert. Using the Kruskal Wallis Test (equivalent to oneway analysis of variance), motivation was compared according to level of development between the five groups. Ten out of the 28 motivation variables showed significant differences in motivation between these groups (Table 4). Groups differed in motivations such as: “To show myself that I can do it,” “Because its sort of an impressive thing to do,” “To develop my diving skills and knowledge,” “To have an experience I can look back on,” and “Because it’s a challenge.” These were most important for beginning divers and decreased in level of importance with higher levels of development. The variables: “For relaxation,” “To share my knowledge,” “To use my equipment,” and “To see shipwrecks” were more important for advanced, expert and post expert divers than beginners and intermediates. The variable “For a change from life” was most important for beginners and advanced divers and less important for expert and post experts, which seems logical since they see diving as everyday life. These variables suggest that the less experienced group of divers, namely

**Table 3. — Mean scores of Pre/Post expectations for diving (n=300)**

Expectation	Mean	Satisfaction	Mean
I will have fun	4.61	Staff was friendly	4.69
I will see nice fish	4.59	I did not get injured	4.68
Equipment will be good	4.55	Equipment was good	4.59
I will feel safe	4.52	I had fun	4.57
Staff will be friendly	4.49	I felt safe	4.57
Will see nice formations	4.49	Staff was competent	4.54
The trip will be well organized	4.42	The trip was well organized	4.49
Staff will be competent	4.41	I saw nice fish	4.47
I will be comfortable	4.40	I was comfortable	4.47
I will not get injured	4.36	I met some nice people	4.42
I will get value for money	4.34	I was well informed	4.36
I will be informed	4.32	I saw nice formations	4.32
I will get to know nice people	4.23	I got value for my money	4.26
I will learn new skills	4.11	I learned new skills	3.76
I will be physically challenged	2.93	I was challenged	2.63
I will get cold	2.50	I took risks	2.29
I will take risks	2.34	I got cold	2.04
I will get scared	2.06	I got scared	1.67

Level of Measurement: 5 point Likert scale ranging from 1= strongly disagree to 5= strongly agree

beginning and intermediate, see the activity as a challenge that needs to be conquered. They want to learn new skills and see diving more as a new experience. Motives for more advanced divers are “to use my equipment,” “to meet new people,” “to share my diving skills/knowledge,” and “for relaxation.” These factors suggest a relatively more relaxed attitude of the advanced divers towards the sport. The pre and post<sup>1</sup> event variables on expectations for beginning and advanced divers showed that beginning divers had significantly higher scores on expectations such as: “I will learn new skills,” “I will get scared,” and “I will be physically challenged.” This is logical since these expectations correspond to their motives for diving as a new challenge and impressive activity that needs to be conquered.

Findings suggest a pattern exists among the motivation and expectation variables indicating that beginning divers are more focused on the diving activity itself. They seek a new experience and to explore new adventure activities they are willing to be physically challenged and to get scared. Advanced divers generally have more realistic expectations and a more relaxed attitude. They are more concerned with the auxiliary benefits of diving such as meeting new people, using their equipment, and sharing their skills.

<sup>1</sup> Data for pre-post test scores for expectations by diver skill level not given due to limitations in length of paper

This same pattern was true for rafters with and without prior rafting experiences in Turner and Fluker’s (2000) study of whitewater rafting. Thus, perhaps this general pattern could be true for other adventure activities (e.g., fishing, sailing, climbing, etc.).

Next, differences between Boy Scouts, national and international divers were found for 12 of the 28 motives using the Kruskal Wallis test (Table 5). International divers showed the highest means for items such as: “for a change from everyday life,” “For a chance to control things,” “For relaxation” and although not significant, “To forget the pressures of my daily life.” The Scouts most often showed the highest scores for motives and regular US divers the lowest. Motives that were most important for the Scouts were: “Because it’s impressive to do,” “Because of the action here,” “Because of the challenge,” “To show myself that I can do it,” and “Because of the risk involved.” When comparing these motives to motives international divers deemed most important one can clearly see some differences. International divers seem to dive for the escape of it, to forget pressures of daily life and to relax. Boy Scouts on the other hand want action, risk, and challenge. They want to conquer something that is exciting and impressive. Motives of most importance to regular US divers were “To see shipwrecks,” “To use my equipment,” “To stay fit,” and “To be with my family/friends.”

**Table 4. — Differences in motivations among diver skill levels (Kruskal Wallis nonparametric test)**

Motive	Beginner Mean Rank	Intermediate Mean Rank	Advanced Mean Rank	Expert Mean Rank	Post Expert Mean Rank	Chi-square Value
To show myself I can do it	195	140	128	110	111	39.11***
Because its impressive to do	175	154	129	117	103	20.80***
To develop skills	170	153	144	116	79	16.80***
Challenge	188	145	143	91	99	34.30***
Action	156	155	137	135	115	
For relaxation	124	147	161	182	205	17.20***
Chance to control things	149	148	151	143	149	
To share my knowledge	122	138	166	197	190	24.34***
To use my equipment	128	144	172	155	160	10.77*
To be with similar people	143	148	153	166	125	
To meet new people	137	146	165	152	175	
To learn more about marine life	159	143	156	143	132	
To see shipwrecks	122	142	166	182	187	17.80***
To study underwater formations	126	142	170	153	107	12.56**
To keep fit	139	143	157	177	121	
To experience tranquility here	127	157	145	165	144	
To forget pressures of daily work	130	151	155	130	134	
For a change from everyday life	156	151	156	115	92	11.16*
For fun	145	149	138	155	120	
Sense of discovery involved	155	138	154	164	120	
To look at underwater Life	143	155	145	152	105	
Experience to look back on	155	146	152	141	109	
It is stimulating & exciting	154	153	149	142	88	
For the adventure of it	149	151	149	149	81	
To be with family and friends	144	153	149	140	159	
To take pictures	147	143	156	148	161	
Because of the risk involved	159	142	157	138	116	
To explore things	153	145	151	154	150	

\*Significant at .05, \*\*significant at .01, \*\*\*significant at .001 level

Group percentages (n=300, 25% beginners, 40% intermediate, 23% advanced, 9% expert, 3% post expert)

Scale measurement – 1=not at all important to 5=very important

Mean ranks reported for each group

A gap analysis was conducted to show the change in mean scores for expectations before the dive and satisfaction afterwards. Out of the 18 pairs of pre and posttest variables, 10 pairs showed significant differences (Table 6), four of which expectations were exceeded including staff will be competent, will not get injured, friendly staff, and meet nice people. The six significant pairs of expectations not met were challenge and quality of marine life related items.

Eight posttest variables were lower than expected, as stated by divers in the Florida Keys.

Expectations not met were: “I will get scared,” “I will be physically challenged,” “I will take risks,” “I will see nice fish,” “I will see nice coral,” “I will have fun,” “I will get cold,” “I will learn new skills,” and “I will get value for my money.

Looking at these items one can see that the scuba business is doing a good job in general in meeting and even exceeding expectations of customers in the Keys. The fact that people don’t get as scared or cold or physically challenged is certainly not going to harm the business. But there are three variables that managers should be careful about. As seen above divers stated that they didn’t have as much fun as expected, the fish and coral were not as nice as expected and above all they didn’t get as much value for their money as expected. These variables are the ones that could hurt a scuba business and should alert scuba stakeholders. Mean scores, however, are high and discrepancies between expectations and satisfaction are relatively small yet the general patterns shown are worth noting. Scuba operations could give divers a choice of dive sites to choose from so they feel they have an input in

**Table 5. — Differences in motivations between the Boy Scouts, International and American Divers (Kruskal Wallis Test)**

Motive	Regular US divers	Boy Scouts	International divers	Chi Square
To show I can do it	137	171	159	10.31**
Impressive to do	130	197	157	40.76***
Develop skills	147	155	153	
Challenge	141	173	147	8.46**
Stimulating/exciting	142	165	165	5.87*
Action	138	177	137	12.90***
Relaxation	154	135	174	
Control things	139	164	205	13.69***
To share knowledge	150	145	147	
Risk	139	173	165	11.14***
Equipment	155	136	128	
Friends/family	152	149	115	
Be with similar people	147	152	170	
Meet people	144	163	160	
To learn	145	161	165	
To explore	148	158	140	
Discovery	148	153	127	
To look	145	156	142	
Adventure	143	167	127	6.41*
Experience to look back on	142	173	118	11.48***
Take pictures	144	166	120	5.89*
See shipwrecks	156	128	154	6.16*
Study underwater	150	137	123	
Keep fit	151	145	135	
For fun	141	160	137	
Experience tranquility	151	134	163	
Forget pressures	143	141	184	
Change from everyday life	143	156	184	4.88 <sup>1</sup>

<sup>1</sup>Approaching significance at .1 level

\*Significant at .05, \*\*significant at .01, \*\*\*significant at .001 level

Scale measurement – 1=not at all important to 5=very important

Mean ranks reported for each group

what to see, hence feel better about what they saw underwater afterwards. Furthermore, divers stated they didn't learn new skills as expected. From comments people left on the surveys we know that divers would appreciate more information about the environment, fish at the dive site or how to handle rough waters. Dive operations could essentially get their dive masters to talk about these issues which would enhance diver feelings they learned something new, got attention and good value for the money.

Upon further analysis (data not presented here due to space limitations), results reveal that Boy Scouts seem quite distinct and different in their expectations. Boy Scouts showed much higher scores on expectation and satisfaction variables than regular US and international divers.

## Conclusions

The study showed differences in motivations and expectations between different sub groups of scuba divers. Beginning and advanced divers showed differences in both motivations and expectations for the experience, which suggests that level of development could be a good means for stakeholders in the scuba industry to segment their markets. Beginning divers are more focused on diving seeking new experiences. To explore new adventure activities beginners are willing to get physically challenged and scared. Advanced divers generally have more realistic expectations about the dive experience and a more relaxed attitude about diving. They are more concerned with such aspects as meeting new people, using their equipment, and relaxing. Agencies and managers of adventure tourism and dive operators may wish to consider

marketing implications based on key findings especially when segmenting the market. Marketers might want to promote themes such as: "Challenge yourself," "Scuba diving is impressive-can you do it?" to beginning divers. When promoting diving to more experienced divers marketers should note that expectations of this group are more realistic, thus instead of promoting challenge and risk, focus on relaxation and being with people of similar interest aspects that appeal to this segment of the market reminding them of previous experiences. The Boy Scouts also showed very different expectations and motivations, and further research could be done to investigate why they are more satisfied with their experience in general, which might be due to their participation in an organized program, a more individual approach with an instructor and dive master per group, or the homogeneity of this group. These findings have direct implications for commercial dive centers to improve their pre dive orientation.

### **Implications**

The purpose of this study was to increase understanding of diver sociodemographics, previous dive experience, and their motives and expectations for diving. This increased understanding might help managers to appreciate this group of recreationists more and enhance more effective environmental and outreach programs in the Florida Keys (i.e. the Florida National Marine sanctuary, PADI Project AWARE.) This knowledge can also benefit management of dive operators to offer efficient and successful diving programs. Dive operators might consider improving diver preparation for their dive experience by showing dive sites on charts, explanation of the marine life and how divers can help preserve the marine environment. Survey comments reveal that divers want to know more about how to dive more environmentally friendly. Dive masters of commercial diver operations could, after giving the necessary safety talk, address beginning divers with tips on no touch diving and information on how to behave in bad weather and in case of emergency. These are many of the things done in the Boy Scout Sea Base program that might be reasons why Boy Scout divers have higher satisfaction scores than those of the commercial dive shops.

Pertinent to further research, an investigation of cross-cultural differences in motivations for scuba

diving is suggested to meet expectations of international divers. This was not possible in this study due to the limited sample of international divers. Divers gave positive comments about the pre-post test survey because it allowed them to directly comment on the extent dive operators and the dive experience met their expectations. This approach allows for action-oriented research providing results for immediate and direct implementation, especially as it pertains to service quality.

### **References**

- Anderson, E.W., Fornell, C. & Lehmann, D.R. (1994). Customer Satisfaction, Market Share, and Profitability. *Journal of Marketing*, 58: 53-66.
- Brown, I. (1989). Managing for Adventure Recreations. *Australian Parks and Recreation*, 25, 37-39.
- Cottrell, S. P. & Graefe, A. (1997). Testing a conceptual framework of responsible environmental behavior. *The Journal of Environmental Education*, 29(1), 17-27.
- Cottrell, S. P. & Meisel, C. (2003). Predictors of personal responsibility to protect the marine environment among scuba divers. Unpublished abstracts. 2003 Northeastern Recreation Research Symposium. Radnor, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station.
- Churchill, G. & Suprenant, C. (1982). An investigation into determinants of customer satisfaction. *Journal of Marketing Research*, 19, 491-504.
- Crompton, J.L. (1979). Motivations for Pleasure Vacation. *Annals of Tourism Research*, 6: 408-24.
- Csikszentmihalyi, M. (1982). Towards a psychology of optimal experience, *Review of Personality and social psychology*, 3: 13-36.
- Danaher, P.J. & Arweiler, N. (1996). Customer satisfaction in the tourist industry: A case study of visitors to New Zealand. *Journal of Travel Research*, 35, (1), 89-93.

- Driver, B.L., Tinsley, H.E., & Manfreda, M.J. (1991). Recreation Experience Preference Scales: Results from two inventories designed to assess the breadth of the perceived psychological benefits of leisure. In B.L. Driver, P.J. Brown, & G.L. Peterson (Eds.), *Benefits of Leisure* (pp. 263-287). State College, PA: Venture Publishing.
- Fluker, M.R.; Turner, L.W. (2000). Needs, motivations, and expectations of a commercial whitewater rafting experience. *Journal of Travel Research*, 38(4), 380-389; 34.
- Mannell, R. & Kleiber, D.A. (1999). *A Social Psychology of Leisure*. Venture Publishing Inc. State College, PA.
- Market Segments (1992). *Adventure holiday*. *Travel and Tourism Analyst*, p. 38.
- Meisel, C. (2003). *Motivational and expectational differences among Scuba Divers in the Florida Keys*, Unpublished Master thesis, Wageningen University, The Netherlands.
- Neulinger, J. (1974). *The psychology of leisure : research approach to the study of leisure*. Thomas Publishing: Springfield, Ill.
- Oliver, R.L. (1980). A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research*. 17: 460-469.
- Schreyer, R. & Roggenbruck, J.W. (1978). The Influence of Experience Expectations on Crowding Perceptions and social-Psychological Carrying Capacities. *Leisure Sciences*, 1:373-94.
- Todd, S. L., Graefe, A. R., and Mann, W. (2001). Differences in Scuba Diver Motivations based on level of development. *Proceedings of the 2001 Northeastern Recreation Research Symposium* (Gen. Tech. Rep. NE-289, pp. 107-114). Radnor, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station.
- Wilks, J. & Davis, R. (2000). Risk Management for Scuba Diving Operators on Australia's Great Barrier Reef. *Tourism Management*, 21: 591-599.

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