

# MOTIVATIONS AND SENSATION SEEKING CHARACTERISTICS OF RECREATIONAL STORM CHASERS

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**Abstract.**—Little is known about recreational storm chasing, a type of risk recreation that has increased in popularity since the 1990s. This study was conducted to understand factors associated with participation in recreational storm chasing in the United States. Particularly, this study assessed the motivations and sensation seeking attributes of recreational storm chasers, as well as the relationship between both constructs. Results showed that recreational storm chasers were mostly motivated by enjoying nature and learning, while least motivated by sense of achievement and risk taking. Regarding sensation seeking, respondents scored highest on experience seeking and lowest on boredom susceptibility. Results also showed some significant correlations between motivational dimensions and sensation seeking dimensions. Study results suggest that additional research is needed to further analyze the relationship between both constructs.

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## 1.0 INTRODUCTION

Storm chasing is considered a new form of risk tourism and recreation, gaining popularity since the release of the movie “Twister” in 1996 (Cantillon and Bristow 2001) and the television series “Storm

Chasers”, on air since 2007. Subsequently, storm chasing tour agencies were established to provide guidance and assistance (e.g., experienced tour guides, knowledge and safety trainings, technical support, and transportation) for this emerging market (Cantillon and Bristow 2001). However, little is known about this activity. Therefore, the purpose of this study was to examine the factors associated with participation in recreational storm chasing tours in the United States. Specifically, this study had the following three objectives: (1) to examine the motivations of recreational storm chasers; (2) to assess the sensation seeking attributes of recreational storm chasers; and (3) to analyze the relationships between motivations and sensation seeking attributes of recreational storm chasers.

## 2.0 LITERATURE REVIEW

Numerous studies examining the decision to participate in risk recreation have suggested that motivations and personality traits are central constructs in understanding participation in risk recreation (Cronin 1991, Diehm and Armatas 2004, Meyer et al. 2002). The recreation experience preference (REP) scales developed by Driver (1983) are among the best-known and tested inventories to measure leisure motivations (Mannell and Kleiber 1997). The REP scales have been employed in numerous risk recreation settings, such as whitewater kayaking (Schuett 1993) and scuba diving (Meyer et al. 2002).

Beyond motivations, sensation seeking has also been used to explain differences in people’s willingness to participate in risky recreational activities. Proposed by Zuckerman (1979), sensation seeking is “a trait defined by the seeking of varied, novel, complex and intense sensations and experiences, and the willingness to take physical, social, legal and financial risks for the sake of such experience” (Zuckerman 1994, p. 27). Among the multiple scales developed to measure sensation seeking attributes, the sensation seeking scale, form

V (SSS-V) is most commonly used. It consists of four sub-scales: (1) thrill and adventure seeking; (2) experience seeking; (3) boredom susceptibility; and (4) disinhibition (Zuckerman 1979). Although it has been widely used, criticism of the SSS-V scale has led to the development of modified scales such as brief sensation seeking scale (BSSS), in which a five-point Likert format (from strongly agree to strongly disagree) replaced the forced-choice format and the number of items in each of the four sub-scales were reduced to two (Hoyle et al. 2002). In turn, various recreation studies have adapted either SSS-V or BSSS to understand their study participants (e.g., Diehm and Armatasm 2004, Jack and Ronan 1998).

Although previous studies have examined both motivations and sensation seeking in connection with various risk recreation activities, no studies to date have examined these traits among recreational storm chasers. In addition, few studies have examined the relationship between sensation seeking and motivations (Babbitt et al. 1990). Hence, this study aims to examine the relationships between the two constructs among recreational storm chasers.

### 3.0 METHODS

Storm chasing tour agencies were approached to help with questionnaire distribution at the end of each storm chasing tour. Five storm chasing tour agencies participated in the study. Survey packages were sent to partnering tour operators in early April 2009. Participants placed their completed questionnaires in individual sealed envelopes, which tour operators collected to put in the mail. Of 115 people who participated in storm chasing tours during the study period, 50 valid questionnaires were returned for a 43.5 percent response rate.

Information on participants' motivations was gathered using 21 items from the REP scale (Driver 1983, Manfreda et al. 1996) representing six motivational dimensions: achievement, stimulation, risk taking, similar people, learning, and enjoy nature.

Respondents rated the importance of each item on a five-point Likert scale (1=very unimportant to 5=very important). To measure sensation seeking, we adapted the SSS-V by removing unrelated items, combining items that tested the same category, and updating the language. The new SSS-V modified scale used in this study included 16 statements (4 under each dimension) and used a five-point Likert scale (1=strongly disagree to 5=strongly agree) following the format of the BSSS. Socio-demographic information of recreational storm chasers was also collected.

Descriptive statistics were examined to assess the motivations and sensation seeking attributes of recreational storm chasers. Cronbach's alphas were computed to assess each factor's internal reliability. A series of Pearson *r* correlations were conducted to analyze the relationships between motivations and the sensation seeking attributes of recreational storm chasers.

## 4.0 RESULTS

### 4.1 Socio-economic Profile of Recreational Storm Chasers

The majority of recreational storm chasers that responded to the survey were male (62.0 percent), White (95.8 percent), or non-Hispanic (92.5 percent). On average, study participants were in their early 40s ( $M=41.9$ ) and 68.8 percent were over 35 years old. A total of 60.5 percent of respondents had at least a college degree, and over one quarter (25.6 percent) had an advanced degree. The majority (61.0 percent) made at least \$50,000 of annual household income; nearly a third (29.3 percent) made at least \$75,000. Most participants (71.7 percent) were employed full-time; about a fifth (15.2 percent) were retired. More than half (56.4 percent) of the tour participants came from North America (56.4 percent), either from the United States (43.5 percent) or Canada (13.0 percent). About a third of respondents were from Europe (30.5 percent) including the United Kingdom, Netherlands, Belgium, and France.

## 4.2 Motivations of Recreational Storm Chasers

The most important motivations for participating in storm chasing (Table 1) were: “To enjoy the sights of nature” ( $M=4.46$ ), “to experience the power of nature” ( $M=4.44$ ), and “to learn more about tornados/storms” ( $M=4.39$ ). In turn, the least important motivations were “To show others I can do it” ( $M=2.37$ ), “to be recognized for doing it” ( $M=2.50$ ), and “to do something impressive” ( $M=2.68$ ).

Each of the six motivational dimensions displayed high internal reliability. Composite means of each motivational dimension show that respondents perceived enjoy nature ( $M=4.37$ ;  $\alpha=0.844$ ) as the most important motivation to participating in recreational

storm chasing, followed closely by learning ( $M=4.25$ ;  $\alpha=0.867$ ). Sense of achievement ( $M=2.77$ ;  $\alpha=0.813$ ) was the least important motivational dimension for storm chasers.

## 4.3 Sensation Seeking of Recreational Storm Chasers

Overall, respondents tended to be neutral on sensation seeking attributes, with 12 of the 16 sensation seeking items ranked as either neutral or low (Table 2).

Respondents scored lowest on “I don’t mind watching a movie I have seen before” ( $M=2.12$ ), followed by “I prefer quiet parties with good conversation” ( $M=2.70$ ), and “I prefer not to use a guide even in a place I don’t know” ( $M=2.76$ ). Respondents did show a preference to explore strange places ( $M=4.32$ ) and “to have

**Table 1.—Motivation dimensions and statements**

Motivation Dimensions and Items	n	$M^1$	SD
Enjoying Nature ( $\alpha=0.844$ )	50	4.37	0.81
To enjoy the sights of nature	50	4.46	0.99
To experience the power of nature	50	4.44	0.93
To be close to nature	50	4.22	0.86
Learning ( $\alpha=0.867$ )	50	4.24	0.81
To learn more about tornados/storms	49	4.39	0.93
To develop my knowledge of tornados/storms	50	4.28	0.88
To experience new and different things	48	4.06	0.95
Stimulation ( $\alpha=0.721$ )	50	3.87	0.83
To have thrills and excitement	49	3.96	1.04
To feel exhilaration	47	3.89	1.03
To experience a lot of action	50	3.76	0.82
Similar People ( $\alpha=0.734$ )	50	3.83	0.68
To be with people who have similar interests	49	4.20	0.68
To be with others who enjoy the same things I do	50	3.90	0.84
To be with members of my group	50	3.40	0.99
Risk Taking ( $\alpha=0.836$ ) <sup>2</sup>	50	3.26	0.91
To take risks	50	3.12	0.98
To be in dangerous situations	50	3.02	0.98
Sense of Achievement ( $\alpha=0.813$ )	50	2.78	0.75
To challenge myself	50	3.30	1.06
To gain a sense of self-confidence	48	2.96	0.97
To show myself I can do it	50	2.84	1.08
To do something impressive	50	2.68	1.00
To be recognized for doing it	50	2.50	1.02
To show others I can do it	49	2.37	1.17

<sup>1</sup> Measured on a five-point scale ranging from (1) Very Unimportant to (5) Very Important.

<sup>2</sup> “To experience not knowing what will happen” was removed to improve scale reliability ( $\alpha=0.542$ )

**Table 2.—Sensation seeking dimensions and statements**

Sensation Seeking Dimensions and Items (n=50) <sup>1</sup>	n	M <sup>2</sup>	SD
Experience Seeking ( $\alpha=0.529$ ) <sup>3</sup>	50	3.77	0.69
I like to explore strange places	50	4.32	0.77
I may change my itinerary on impulse when I travel	50	3.22	0.91
Thrill and Adventure Seeking ( $\alpha=0.789$ ) <sup>4</sup>	50	3.02	1.10
I prefer safe sports/activities (e.g., yoga)	50	3.14 <sup>6</sup>	1.23
I like to do frightening things	50	3.14	1.23
I like to try risky sports	50	2.78	1.45
Boredom Susceptibility ( $\alpha=0.680$ ) <sup>5</sup>	50	3.15	0.85
I get restless when I spend too much time at home	50	3.46	1.20
I prefer friends who are excitingly unpredictable	50	3.04	1.07
I like the comfortable familiarity of my usual environment	50	2.94 <sup>6</sup>	1.00

<sup>1</sup> Disinhibition dimension was removed due to unacceptable scale reliability ( $\alpha=0.249$ ) with four items (i.e., “I like to have unconventional exciting experiences,” “I like friends that are different than me,” “Stimulants make me uncomfortable,” and “I prefer quiet parties with good conversation”).

<sup>2</sup> Measured on a 5 point scale from (1) Strongly Disagree to (5) Strongly Agree.

<sup>3</sup> “I like to try new foods that I have never tasted before” and “I prefer not to use a guide even in a place I don’t know” were removed to improve scale reliability ( $\alpha=0.195$ )

<sup>4</sup> “Relaxation is my most important goal for recreation” was removed to improve scale reliability ( $\alpha=0.628$ ).

<sup>5</sup> “I don’t mind watching a movie I have seen before” was removed to improve scale reliability ( $\alpha=0.616$ ).

<sup>6</sup> Scale item means were reverse-coded.

unconventional exciting experiences” ( $M=4.10$ ).

Likewise, respondents scored relatively high on “I like to try new foods that I have never tasted before” ( $M=3.69$ ) and “I like friends that are different than me” ( $M=3.60$ ).

After the removal of several items, Cronbach’s tests indicated acceptable levels of internal reliability for three out of four sensation seeking dimensions: experience seeking ( $\alpha=0.529$ ), thrill and adventure seeking ( $\alpha=0.789$ ), and boredom susceptibility ( $\alpha=0.680$ ). The disinhibition dimension was removed from further analysis because correction measures did not result in an acceptable alpha coefficient, even after several items were removed. In sum, eight statements representing three of the four original dimensions were retained. Of these three dimensions, respondents had moderately high scores for the experience seeking dimension ( $M=3.77$ ). However, storm chasers did not show signs of having high sensation-seeking traits on the thrill and adventure seeking ( $m=3.02$ ) or boredom susceptibility dimensions ( $m=3.15$ ).

#### 4.4 Association between Motivation and Sensation Seeking

Pearson r correlations conducted between the two constructs showed some statistically significant correlations (Table 3). Experience seeking was positively associated with similar people ( $r=0.282$ ;  $p=0.047$ ) and learning ( $r=0.332$ ;  $p=0.018$ ). However, analysis showed that there was no significant correlation between experience seeking and the other motivational dimensions. Thrill and adventure seeking was found to be positively correlated with the risk taking motivational dimension ( $r=0.491$ ;  $p<0.001$ ). There were no significant correlations between thrill and adventure seeking and the other five dimensions of motivations. There was no significant correlation between boredom susceptibility and any of the six motivation dimensions examined in this study.

#### 5.0 CONCLUSION

Enjoy nature, learning, and stimulation were found to be the top three motivations for engaging in recreational storm chasing, while sense of achievement

**Table 3.—Correlations between sensation seeking and motivation dimensions**

Sensation Seeking	Motivations	Pearson <i>r</i>	<i>p</i> value
Experience Seeking	Sense of Achievement	.060	.679
	Risk Taking	-.014	.921
	Similar People	.282*	.047
	Enjoy Nature	.210	.144
	Learning	.332*	.018
	Stimulation	.100	.489
Thrill and Adventure Seeking	Sense of Achievement	.222	.122
	Risk Taking	.491**	.000
	Similar People	.076	.600
	Enjoy Nature	-.065	.656
	Learning	-.058	.687
	Stimulation	.218	.128
Boredom Susceptibility	Sense of Achievement	.208	.148
	Risk Taking	.241	.092
	Similar People	.200	.164
	Enjoy Nature	.175	.225
	Learning	.076	.601
	Stimulation	.204	.156

\* $p < 0.05$       \*\* $p < 0.001$

and risk taking were the least important. A low score on risk taking has also been found in previous studies (Ewert 1985, Meyer et al. 2002). The finding that recreational storm chasers were mostly motivated by enjoying nature and learning can be used as a marketing tool to combat the stereotype that recreational storm chasers are simply reckless thrill seekers and to shift the general public's perception of this type of risk recreation activity. It also indicates that participants in various risk recreation activities do not pursue risks as their ultimate goals, but primarily seek challenging experiences.

Study results show that responding storm chasers overall are neutral in various sensation seeking attributes, contradicting previous studies showing high scores in every sensation-seeking dimension (e.g., Cronin 1991, Slinger and Rudestam 1997). These results may suggest that recreational storm chasers are different from other risk recreation activity participants, especially because their personalities seem to be more drawn to new experiences rather

than the risks involved. This is also in line with storm chasers being strongly motivated by the enjoyment of nature and learning.

The relatively high score on experience seeking combined with lower scores in other sensation seeking dimensions in this study has also been previously reported in the literature (e.g., Diehm and Armatas 2004, Cronin 1991). These results may be associated with participants in organized tours with experienced guides, indicating that the risk perceived or sought may be reduced compared to those that chase storms on their own. Likewise, tour operators offered various activities and programs during the nonaction time, which may have lowered boredom susceptibility scores.

Overall, there were few correlations between storm chasing motivations and sensation seeking dimensions indicating that they are distinct and independent constructs that measure different factors related to participation. However, there was a significant positive

correlation between experience seeking and two motivational dimensions, similar people and learning. This suggests that storm chasers may consider learning from the activity, and being with similar people who share their interests as an important component of the overall storm chasing experience. The positive correlation between thrill and adventure seeking and risk taking is not surprising because both constructs are similar. However, overall these results suggest that further inquiry is needed regarding sensation seeking.

The dispersed nature of recreational storm chasers, few severe weather conditions during the 2009 season, and the weak 2009 national/global economic situation led to a small sample size in this study. Therefore, future research is recommended to better understand recreational storm chasing as well as the relationship between motivations and sensation seeking. Furthermore, future research should replicate this study in other types of risk recreation activities to examine the extent to which the Disinhibition dimension is a valid descriptor of a personality trait (i.e., sensation seeking) or an attribute associated with certain types of recreational activities.

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