The Impact of High Risk Propensity on Lifestyle and Consumption Behaviors

The Honors Program

Senior Capstone Project

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April, 2009

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ABSTRACT

This research investigates the effects of high-risk propensity (as measured by the sensation seeking scale) on lifestyle variables such as substance use and abuse, number of sexual partners and driving behavior, and explores the consumption patterns exhibited by different risk propensity groups. An online survey with 340 participants was conducted; 64 low, 204 medium and 62 high sensation seekers were identified. High sensation seekers exhibited riskier behaviors across all lifestyle and consumption behaviors and led us to conclude that it is, in fact, a constant personality variable. We have not found a significant difference between age and sports activities one participates in, showing that "risk taking does not disappear, only changes form." Our findings suggest that marketers should rely on psychographics rather than demographics when accessing and communicating to this risk-taker target segment; they can also leverage this research in new product development and in identifying cross-selling opportunities.

INTRODUCTION

"Only those who are willing to go too far, can find out how far they can go." - T.S. Eliot

Jumping out of a plane from 13,000 feet is a regular weekend activity for some people. Are they ordinary? Doubtful, they probably enjoy taking risks. High risk propensity seems to be fueled by the desire to experience life to the fullest. Does this high risk-propensity appear in other everyday activities like shopping, driving a car, choosing a partner, gambling, investing and others? This research study is seeking the answer to these questions.

We face decisions on a regular basis as consumers and as social beings, and the way these decisions are made tends to reflect our personalities. Risk is an everyday part of our lives. Some people enjoy risks more than others, some even to the extent that they pick a hobby such as B.A.S.E. jumping or skydiving. They thrive when the adrenalin is rushing through their veins and go out of their way to reach high levels of stimulation. Our research aims to explore these individuals with high need for sensation seeking (Zuckerman, Kolin, Price, & Zoob, 1964) as it strongly relates to the level of risk propensity. We want to provide a consumption-profile based on a personality variable of sensation seeking, and look at patterns of how the outlet for risk-taking behavior changes as the individual gets older; we argue that risk-taking does not disappear of one's life, only changes form.

There have been two major paths to explain risk-taking. Prospect theory provides one description of risk-takers and risk-averse individuals. The theory implies that individuals are rational decision makers and an evaluation decision sequence takes place when weighing a decision. (Kahneman & Tversky, 1979) Empirical evidence suggests that the decisions are based on potential gains or losses. This situation-specific approach to risk taking sounds plausible, but maybe an oversimplified version of a more complex psychological thought process that cannot be explained by rational decision making. The model implies that a person reacts to each situation differently, treating it as a separate domain. Taking the "domain-specific" route means hitting a "reset-button" before every situation encountered, and making a rational decision solely based on the expected gains and losses. This framework does not account for individual personality differences, believing that when it comes to risk-taking, it is

only the way the choices are presented and the individual's unconscious loss/gain calculation that determines the choice. Prospect theory proposes an asymmetrical effect, that is, that individuals will be risk takers in some situations, and risk averse in others. The outcome will be based on how the choices are presented, as "losses loom larger than gains."

An example would be when a person is presented with the same investment opportunity by two different financial advisors. The first tells the investor that the mutual fund has had an average return of 7% over the past five years. The second advisor tells the investor that the mutual fund has seen above-average returns in the past 10 years but has been declining in recent years. According to prospect theory, even though the investor is presented with the same mutual fund, he or she is more likely to buy the mutual fund from the first advisor, who expressed the rate of return as an overall 7% gain, rather a combination of both high returns and losses. (Investopedia, 2009) The level of risk taking is not equivalent in consumers' minds.

Individuals assess risk differently, and consumers with high-risk propensity assess situations differently, as utility may be derived from the potential losses. This goes against conventional thinking, but by definition sensation seekers are people "who need varied, novel, and complex sensations and experiences to maintain an optimal level of arousal." (Zuckerman, Bone, Neary, Mangelsdorff, & Brustman, 1972) Zuckerman's research provides the second approach to high-risk takers, which is the primary academic foundation for this paper. He has contributed significantly to the investigation of high-risk propensity and sensation seeking, and argues that these are character traits rather than domain-specific rational choices. (Zuckerman, et al., 1972) Zuckerman has also explored the psychobiological background to sensation seeking. (Zuckerman & Kuhlman, 2000)

A better understanding of these individuals will contribute to existing consumer behavior research and help companies who are specifically targeting this psychographic segment such as extreme sports equipment manufacturers and service providers. These are emerging industries, and can create great opportunities for marketers. Risk taking can be explained by the increasing popularity of the dramatic world view and the popularization of extreme lifestyle by the media, which causes a "paradoxical consumer behavior." (Shoham, Rose, &

Kahle, 2000) It is paradoxical in the sense that one pays to be put in a situation fraught with danger and potential for injury. For example: a skydiver pays thousands of dollars for the gear (container/harness system, parachute, various accessories) plus the jump ticket (every time the person wants to jump), even though the participant knows serious injury or even death could result. According to the United States Parachute Association, on average there are 35 fatalities out of more than 2 million jumps made (there are around 900 major injuries on average per year – many minor injuries go unreported).

Another premise of our research is to explore generational implications, as a risk-taker in his/her 20s is different than a high sensation seeker in his/her 50s. We propose the idea that the personality trait is stable across the life-span, but the outlet for the high-risk activity is very likely to change. Thus, young risk seekers may participate in extreme sports, while older risk seekers may make riskier investments or gamble more.

LITERATURE REVIEW

High-Risk Takers

In the existing literature, risk propensity is strongly linked to sensation seeking – the original idea and measures were proposed by Zuckerman (1974). His original research was based on compulsive gambling and other high risk activities. Since then a myriad of research studies have supported the findings, which ultimately indicated that risk-propensity is a stable personality characteristic, while prospect theory (Kahneman & Tversky, 1979) suggests that risk-taking is domain specific, and depends on the situation. Our research is only focusing on high-risk taking individuals, and will follows Zuckerman path, because people not showing consistency in their attitudes toward risk would not generally be regarded risk-takers (Nicholson, Fenton-O'Creevy, Soane, & Willman, 2005). High sensation seekers are typically uninhibited, social, and impulsive people who are clearly averse to low-sensation or boredom (Zuckerman, et al., 1972).

Identifying and measuring personality dimensions has a long history. The first psychologist to study personality using factor analysis was Eysenck. His model originally predicted two major personality dimensions: Extraversion and Neuroticism. A third variable – Psychoticism

– was added in the mid 1970s (Zuckerman, Kuhlman, Joireman, Teta, & Kraft, 1993). This "Big Three" model was the dominating theory for half a century in the fields of experimental and correlational personality research. However, Eysenck's research was challenged and called for a more detailed framework of personality.

One of the most widely used personality-assessment scales is the Revised NEO Personality Inventory (NEO PI-R) – The Big Five Personality Test – developed by Costa and McCrae (1992). This is a mainstream personality inventory that has grown out of Eysenck's "Big Three", and was designed to be used on adults (17+). The model predicts 5 major factors of personality: Neuroticism (N), Extraversion (E), Openness to experience (O), Agreeableness (A) and Conscientiousness (C). (McCrae & John, 1992) The advocates of this model argue that these basic five factors are included in virtually all personality-scales either as they are referred here, or as combinations. Neuroticism refers to the emotional stability of a person; the higher the score is, the less stable. Extraversion is the measure of how outgoing a person is, and gives an idea about the desire for social stimulation. Openness to experience is a gauge for another kind of stimulation; people scoring high in this factor are usually intellectually curious, non-conventional people. High scores in agreeableness indicate the ability to cooperate instead of constantly challenging and questioning others. Last but not least, conscientiousness measures the level of discipline, the drive to succeed; people scoring low on this scale would be more spontaneous, but less driven (McCrae & John, 1992).

Soane and Chmiel (2005) used the Big Five to look for consistency in high-risk taking behavior patterns and personality traits. They have found that individuals can be divided into two groups: those who were consistent, and those who were not. People consistently exhibiting risk-averse behavior across three important areas of their lives (work, health and personal finance) scored significantly higher in the A and C factors and lower in the O trait. Emotional stability influences risk-preference. This makes sense, as by definition (according to McCrae & John) a risk-averse person prefers consistency in his experiences and has a method in making decisions in any situation, rather than acting impulsively. The authors were not able to draw significant conclusions about participants who preferred risks. They noted that the sample might have been a limitation, and a larger sample size with more women might have increased the number of consistent decision makers (Soane & Chmiel, 2005).

Research shows that both domain- and personality-specific risk preferences are possible, but the focus of this paper is individuals who show consistency in their risk-preference as indicated by their SSS score.

Zuckerman et. al. (1993) conducted a comparative study among 3 structural models of personality: Eysenck's Big Three, Costa and McRae's Big Five, and the Alternative Five developed by Zuckerman and Kuhlman (Zuckerman, et al., 1993). The alternative five proposes five basic personality traits: Sociability, Neuroticism-Anxiety, Aggression-Hostility (vs. Social Desirability), Impulsive Sensation Seeking, and Activity (Zuckerman, Kuhlman, Thornquist, & Kiers, 1991). These factors were selected because of their known psychobiological basis. A person with high-risk propensity scores high on Impulsive Sensation Seeking, Aggression-Hostility and Sociability. Gender differences are most visible in the Impulsive Sensation Seeking factor; males score significantly higher, indicating that males are more likely to be risk-takers. This variable shows a positive correlation with commonly perceived risky activities in a college environment, such as drinking, smoking, drug use and sex (Zuckerman & Kuhlman, 2000). Besides gender, a good predictor for risktaking behavior is age. Young males are much more likely to score high on the sensation seeking scale and engage in risky activities than older males and females generally. "The peak of risky behavior" is said to be between 18 and 29 and the desire to engage in such activities drops significantly after that (Boyd & Kim, 2007).

Measuring this kind of risky behavior has been Zuckerman's main research interest. The most used measure to assess sensation seeking was developed by Zuckerman in 1964. The Sensation Seeking Scale (SSS) has four factors, each measuring a different dimension of personality characteristics. Thrill and Adventure Seeking (TAS), gauges the desire to engage in extreme activities, such as skydiving, snowboarding, surfing etc; Experience Seeking (ES) is the indicator of the need for sensory stimulus; Disinhibition (Dis) represents a propensity to disregard conventional values for social and sexual behavior; the fourth factor is Boredom Susceptibility represents an "aversion to repetition" (Zuckerman, Eysenck, & Eysenck, 1978). The TAS subscale is of specific interest to this research. This sub-factor within the sensation scale specifically measures the desire to engage in extreme sports mentioned above. We can conclude that participants of extreme sports will most likely score high on the SSS, and

drawing from a pool of these people will provide a good sample for high risk-propensity individuals.

A table summarizing the likely scores of different demographics on three dominant personality scales is provided below. Please note that these different scales were designed to measure different kind of personalities. The Big 5 takes a general approach to personality whereas the SSS and the Alternative 5 are more geared towards individuals with high risk-propensity.

Personality Models and Risk Taking

	Th	e Big	3 5 (I	NEO	PI-R)			SSS			Altern	ative 5		
	N	Е	О	A	C	TAS	ES	Dis	BS	ImpSS	N-Anx	Agg-Ho	Sy	Act
Risk Seeker	\downarrow	1	1	\downarrow	\downarrow	↑	1	1	↑	↑	\downarrow	\leftrightarrow	↑	\leftrightarrow
Male	↓	1	1		↓	↑	1	\leftrightarrow	\leftrightarrow	1	↓	1	\leftrightarrow	↑
Female	\leftrightarrow	\leftrightarrow	1	1	<u> </u>	1	1	\leftrightarrow	\leftrightarrow	1	<u> </u>	1	\leftrightarrow	
18-29	1	1				<u> </u>		\leftrightarrow	\leftrightarrow	, 1		· · · · · · · · · · · · · · · · · · ·	\leftrightarrow	
30+	→	\leftrightarrow	<u> </u>	<u>,</u>	→	· ·		\leftrightarrow	\leftrightarrow	i i	· · · · · · · · · · · · · · · · · · ·	i	\leftrightarrow	
			*		l	. *	Ψ			Ψ	l l	Ψ		¥

 \downarrow - Expected to score lower \uparrow - Expected to score higher \leftrightarrow - No significant difference

All of the above discussed personality scales take a psychobiological approach to human behavior. This school of psychology attempts to relate a biological variable, e.g. an anatomical, physiological, or genetic variable, to a psychological or behavioral variable. There is some evidence of the psychobiological background to novelty-seeking. Zuckerman's research indicates that Monoamine oxidase (MAO) is linked to impulsive behavior patterns. MAO-B functions to regulate dopamine levels in the brain, a neurotransmitter that is said to be the driver of high-risk behaviors like substance use and abuse (Zuckerman & Kuhlman, 2000). Other interesting findings include risk taking being positively related to height and parental education (Dohmen, et al., 2005) which might provide further evidence of underlying biological and hereditary factors.

Celsi et. al. (1993) has taken a socio-cultural approach with a biological background to explain the paradoxical nature of risk-taking behavior. In his research with skydivers, he points out that skydivers will become addicted to the high the sport gives them, rather than perceiving it as a risk (Celsi, Rose, & Leigh, 1993). This fits in nicely with the Opponent Process Theory (Solomon, 1980), a conceptual framework that is meant to explain the desire

for love, power and thrill-seeking or the underlying factors of addiction. Solomon argued that in the case of emotion pairs, such as pleasure vs. pain or risk vs. certainty, the removal of one emotion often produces the other. The examples he used were the instant rush of landing safely after a skydive (surviving a "life-threatening" situation) or the euphoria caused by heroin after the physical pain of inserting the needle. It becomes addicting when the individual becomes accustomed to the pleasurable sensation ("habituation") and starts experiencing withdrawal symptoms when not engaging in the activity that causes this. This is a very powerful argument that states that being a high-risk taker is addictive. This is not only because of the physical-feeling, but because of the social-status that is achieved by being part of something "extreme," a dramatic world-view that is communicated by the media. (Celsi, et al., 1993; Shoham, et al., 2000) Similar conclusions were drawn from a study done on skateboarders. (Boyd & Kim, 2007)

Using the biological foundation of risk propensity, Zuckerman has argued that individuals differ in their optimal level of stimulation (OLS). Too little stimulation would lead to a behavior aimed to increase stimulation; while too much would cause a sensory overload, hence the desire to reduce the input. A controversial concept that relates to OLS is risk homeostasis (Wilde, 2001). This theory argues that everyone has a fixed range of acceptable risk-equilibrium of risk-stimulation. This range needs to be constant, and if the perceived risk gets lower, the need for stimulation increases, hence there will be another outlet for riskier behavior. Wilde's research argues that safety features in cars do not lower risks, just shift them. He uses safety belts as an example: because cars have an added safety feature, the driver feels safer, which reduces the level of stimulation below the OLS. In order to get back in the desired range, he/she will take on a different risk; for example, driving faster. This is relevant to our research. Previous studies have established that age is negatively related to risk-propensity (Dohmen, et al., 2005; Nicholson, et al., 2005; Zuckerman, et al., 1993). However we hypothesize that as one ages, risk-taking behavior will continue, but take a different form. A person, who enjoyed extreme sports (such as skateboarding) in his 20s, might have become another risky sport enthusiast – taking his physical limitations into consideration - where his OLS is met.

Taking the discussed biological variables and OLS into account, we can conclude that high risk takers are likely to be confident, willing to take physical risks, would score high on Zuckerman's SSS and on factors E and O with low N, A and C on the Five Factor model. Research suggests that they are more likely to be males, ages of 18 and 29; enjoying the social validation that being known as a high-risk taker gives them.

Hypothesis Development for High Risk Propensity and Lifestyle

Understanding high-risk takers can be very important to marketers of products and services that are designed for this group. The literature about sensation seeking indicates that this is a personality variable that will affect behavior across a wide varied of contexts. We hypothesize that:

H₁: Compared to other groups, risk-takers will:

- Have more sex partners
- Will be more likely to engage in substance use and abuse (per SSS)
- Exhibit riskier driving behavior (number of speeding tickets/accidents)

High-Risk Propensity and Consumption Behaviors

If sensation seeking is a personality variable as opposed to domain specific behavior, then consumers with high risk propensity will be very likely to exhibit different consumption behaviors than their risk-averse counterparts. One of the basic concepts of explaining risk-taking in consumer behavior is the conceptual framework of the previously mentioned Optimum Stimulation Level (OSL). OSL is an inverted U-curve, where an intermediate stimulation level derives the most utility for a consumer. It has been established that exploratory consumer behavior relates to the individual's OSL. (Steenkamp & Baumgartner, 1992)

Exploratory consumer behaviors have been put into three main categories: curiosity-motivated behavior, variety seeking behavior, and risk-taking & innovative behavior.

Curiosity-motivated is a response to boredom as a consumer. It can be stimulation-source specific, where the individual will explore the source of curiosity in depth. In this case, the customer would investigate all the options that he has available, and wait until he finds the best bargain. For example, when buying a new car, the customer would go to many dealerships, investigate on-line about prices and deals, and the purchase process would take a significant amount of time.

On the other hand, diverse curiosity does not have one specific focus of source of stimulus. It is not focused, hence a very spontaneous action plan. This kind of curiosity can last for only a few minutes, or it can turn into stimulation-source specific if one item arouses the attention of the customer.

Variety-Seeking is also a reaction to boredom and a below-optimal level of stimulation of the purchase. It has been found that the utility derived from brand switching is positively related to the OSL of an individual. (McAlister & Pessemier, 1982) "Adventure-shoppers" would fall into this category; this concept closely relates to impulse purchases, as brand-switching may not be a planned choice in case of a sensation-seeker customer, but rather an attempt to increase stimulation levels.

Risk Taking and Innovative Behavior are the ones that are most relevant to this research. Any time the word "risk" is mentioned, there is a chance of loss. Risk taking is said to be arousing (Slovic, 1964), and is positively related to the risk taking behavior explored by Zuckerman. This behavior involves risk-taking tendencies and is positively related to the OSL. It would be interesting to see whether high-risk propensity in sports would be consistent across other consumption behaviors as well.

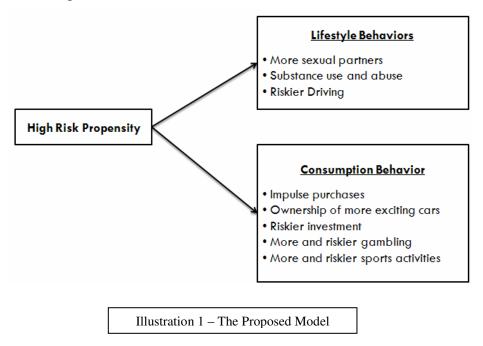
Hypothesis Development for High-Risk Propensity and Consumption Behavior Based on our discussion above, we predict that:

H₂: Consumers with high risk-propensity will be more likely to exhibit riskier consumption patterns for:

Perception of shopping

- Drive riskier and/or more exciting automobiles
- Investments (stocks, bonds, mutual funds, real estate)
- Gambling
- Sports

In summary, we predict that high sensation seeking will have an effect both on lifestyle choices and consumption behavior.



If the predictions are true, marketers will be able to leverage this in their psychographic segmentation strategy.

METHOD

Our conceptual independent variable is the participants' risk propensity, measured by Zuckerman's SSS-V. To generate a sufficient number of high risk taking individuals, an online survey was distributed to skydivers. Parachutists are the highest overall sensation seekers (Zuckerman, 2007) and provide a great pool for research. In order to find the other end of the spectrum, Bryant University faculty and staff was asked to participate in the survey, as we would predict them to be mostly low and medium sensation seekers. The conceptual dependent variables were lifestyle choices and consumption behavior.

The Survey

The core of the survey (See Appendix A) was Zuckerman's Form V Sensation seeking scale (SSS-V). This is a shorter version of the Form IV, taking 10 items for each of the four factors (Thrill and Adventure Seeking (TAS), Experience Seeking (ES), Disinhibition (Dis) Boredom Susceptibility (BS)) with the highest factor loading, to arrive at a 40 item scale. Internal consistency of the overall scale is between .82 to .86 (Zuckerman, 1979).

The self-reported survey collected data on multiple variables regarding social and consumption behaviors. For social behavior, the variables were the following: number of speeding tickets, number of automobile accidents and number of sexual partners.

Zuckerman's Form V also included social behavior questions related to sensation seeking, for example: substance use, travelling preferences etc. For consumption behavior the variables were as follows: automobiles owned, type of investments owned, impulse purchase behavior, gambling, and sports activities. Demographical variables were also collected in order to draw conclusions about age/gender related findings.

Participants

340 useful responses were gathered through the on-line survey. Respondents for the risk-taker group were recruited through on-line forums and e-mail lists that included only active skydivers. 127 responses were collected from this method. The control group consisted of Bryant University's faculty and staff; a mass e-mail was sent out to encourage individuals to "take a 10 minute survey about lifestyle and consumption behaviors." 213 were responses were collected from this method. QuestionPro, an on-line survey tool was used to administer the survey and collect the data.

Below is a chart, describing some basic demographics of the respondents.

The Impact of High Risk Propensity on Lifestyle and Consumption Behaviors Senior Capstone Project for Gergely "Nemo" Nemeth

Gender	Sample (n=340)	Skydivers (n=127)	Bryant University (n=213)
Male	45.5%	68.0%	31.7%
Female	54.5%	32.0%	68.3%
Age			
25 and Under	21.5%	23.2%	20.5%
26 to 35	20.0%	27.2%	15.6%
36 to 45	22.4%	26.4%	20.0%
46 to 55	24.8%	19.2%	28.3%
56 or older	11.2%	4.0%	15.6%
Income			
Below \$25,000	10.9%	14.4%	8.8%
\$25,000 to \$49,999	17.3%	19.2%	16.1%
\$50,000 to \$74,999	14.8%	17.6%	13.2%
\$75,000 to \$99,999	21.2%	20.0%	22.0%
\$100,000 or more	35.8%	28.8%	40.0%
Education			
Grade School	0.6%	0.0%	1.0%
High School	22.1%	24.8%	20.5%
2-yr College	13.9%	20.0%	10.2%
4-yr College Graduate or Prof.	25.8%	28.0%	24.4%
Degree	37.6%	27.2%	43.9%
Illustratio	on 2 – The Partic	cipants	

Group Assignments

For the hypothesis testing, the respondents were grouped into 3 categories, based on their overall SSS-V score. Extensive research has been done on the scale by Zuckerman (Zuckerman, et al., 1991), with a reported population mean of 19 (sd=5.8). Our results are slightly higher (m=19.9, sd=7.9), which may be attributed our recruitment processes, as we specifically recruited from a group of high sensation seekers. (See Appendix B – Figure 1)

Based on our data, we divided the sample into three groups: low sensation seekers, medium sensation seekers and high sensation seekers. The categories were based on the SSS-V scores. The medium sensation seeker group (n=209) was compromised of subjects whose SSS-V scores were within a standard deviation of the mean, scores 13 through 27. Sixty-five scored below 13, they were designated as low sensation seekers, and sixty-six people scored above 27 points and were designated as high sensation seekers. As expected, not every skydiver was

a high-risk taker, and there were high risk takers in our control group (see Appendix B - Figure 2), which is why when running our data analysis we have made the group assignments based on risk-propensity rather than the channel through which participants were recruited.

The chart below shows the basic demographic characteristics of the participants according their group assignment based on Zuckerman's SSS-V.

Gender	Sample (n=340)	High Sensation Seeker (n=66)	Medium Sensation Seeker (n=209)	Low Sensation Seeker (n= 65)
Male	45.5%	70.3%	44.1%	24.2%
Female	54.5%	29.7%	55.9%	75.8%
Age				
25 and Under	21.5%	32.8%	23.0%	4.8%
26 to 35	20.0%	26.6%	20.6%	11.3%
36 to 45	22.4%	20.3%	25.0%	16.1%
46 to 55	24.8%	17.2%	23.0%	38.7%
56 or older	11.2%	3.1%	8.3%	29.0%
Income				
Below \$25,000	10.9%	15.6%	10.8%	6.5%
\$25,000 to \$49,999	17.3%	10.9%	17.2%	24.2%
\$50,000 to \$74,999	14.8%	23.4%	13.2%	11.3%
\$75,000 to \$99,999	21.2%	15.6%	23.0%	21.0%
\$100,000 or more	35.8%	34.4%	35.8%	37.1%
Education				
Grade School	0.6%		0.5%	1.6%
High School	22.1%	28.1%	21.1%	19.4%
2-yr College	13.9%	15.6%	13.2%	14.5%
4-yr College Graduate or Prof.	25.8%	29.7%	26.5%	19.4%
Degree	37.6%	26.6%	38.7%	45.2%

RESULTS

Lifestyle variables

As discussed earlier, our lifestyle variables for H_1 were the following: number of sex partners, substance use/abuse and driving behavior.

Illustration 3 – Risk Taking Group Assignments

Number of Sex Partners

The first thing we looked at was number of sex partners. The Chi-square test revealed that there is indeed a statistically significant difference between groups (p<.0005). High sensation seekers have significantly more sexual partners (mode="more than 20") than medium sensation seekers (mode="6" to 10"). Low sensation seekers had the least amount of sexual partners (mode="1" to 2"). (See Appendix B – Figure 5)

Substance Use and Abuse

The second lifestyle behavior we examined was substance use and abuse. The SSS-V has 5 questions related directly to drug or alcohol consumption (questions 9, 10, 13, 30 and 36). A "substance" subscale was created to measure each individual's answer. The answers are directly related to risk taking, but not all high sensation seekers scored high on this subscale. However, the differences between groups were significant (p<.0005), with the high sensation seeking group scoring the highest (m=4.12). The medium and low groups scored significantly lower (m=2.08 and m=0.5 respectively). (See Appendix B – Figure 6) These results were not unexpected as we used a subscale of the SSS-V. However, a person scoring high on the overall SSS, might not score high on a subscale that includes illegal behavior.

Driving Behavior

The third social behavior we looked at was risky driving behavior, as measured by the number of speeding tickets and accidents. The results of the Chi-square test were statistically significant (speeding tickets p=.002; auto accidents p=.019), indicating a rank-order as expected (See Appendix B – Figure 7). High sensation-seekers were more likely to have more speeding tickets as well as automobile accidents.

Consumption Behavior

To examine consumption behaviors, we asked subjects questions about a variety of shopping behaviors. In order to find significantly different behaviors in consumption patterns, a one-way ANOVA was run. This statistical method was appropriate, because participants rated their shopping behaviors on a 5 point Likert-scale, 1 being "Strongly Agree" and 5 being "Strongly Disagree." Four out of the seven variables showed statistically significant differences (See Appendix C – Figure 8): "buying things on a whim" (p=.003), "shopping is a

chore" (p=.041), "making shopping lists" (p<.0005) and impulse purchasing (p=.001). All these behaviors relate to risk-taking and innovative purchasing behavior, and are likely a response to below optimal levels of stimulation. (Steenkamp & Baumgartner, 1992)

The significant differences between risk-taking groups are illustrated in the table below.

Significant Shopping Behavior Differences Between Risk-Taking Groups

	Medium Sensation Seekers	High Sensation Seekers
	• Buying things on a whim (p=.005)	• Buying things on a whim (p=.001)
Low Sensation	• Making shopping lists (p=.001)	• Making shopping lists (p=.0005)
Seekers	• Impulse purchases (p=.034)	• Impulse purchases (p=.002)
		• Shopping is a chore (p=.013)
Medium Sensation Seekers		Making shopping lists (p=.003)

As expected, the most differences were between the low and high sensation seeker groups. Means were in the expected directions. (See Appendix C – Figure 9) High sensation seekers agreed the most to buying things on a whim (m=2.3), followed by the medium sensation seeker group (m=2.6) and then low sensation seekers (m=3.0).

Impulse purchasing had very similar results, with the same order emerging: high sensation seekers (m=2.3), medium sensation seekers (m=2.6), low sensation seekers (m=3.0).

The case of making shopping lists was statistically significant between all groups: low sensation seekers (m=2.1), medium sensation seekers (m=2.7) and high sensation seekers (m=3.2). Lastly, shopping perceived as a chore brought the expected results and order: high sensation seekers (m=2.5), medium sensation seekers (m=2.9) and low sensation seekers (m=3.1).

Automobiles

Looking at the type of car each sensation seeking group owns can also be indicative of their consumption behavior. In order to derive a rank order of excitement of cars, a Q-sort was conducted with 10 people at the University Library. Participants categorized 13 types of cars as "Exciting," "In-Between," or "Boring." We then assigned each category a multiplier (1.5, 1 and 0.5 respectively) and scores were calculated according to this formula: Auto Excitement

Score = [number of participants ranking the car as exciting*1.5] + [number of participants ranking the car as in-between*1] + [number of participants ranking the sport as boring*0.5]. A rank-order was established (See Appendix C – Figure 11). This order is not conclusive evidence, because the scores are only averages. The group of "pick-up trucks," was not used for any statistical analysis because people found these automobiles either exciting or boring, no one categorized them as "in-between." H Illustration 4 – Risk Taking and Automobiles in-between" score. Because of this confounding issue, the category of "pick-up trucks" was dropped from the analyses.

According to our rankings order, we divided the type of cars into three groups and then examined who owned which type of car. High sensation seekers owned

Automobiles Owned	Exciting	In-Between	Boring
Low SS	4%	34%	62%
Medium SS	14%	38%	48%
High SS	18%	39%	43%

proportionally more cars categorized as exciting than any other group, followed by medium sensation seekers and then low sensation seekers. Interestingly, high sensation seekers also tend to own more "boring" cars, as well. It may be that households that own an "exciting" car, temper that with a boring car for financial reasons. Additionally, high sensation seekers may drive these "boring" automobiles in a riskier manner. This surprising result needs further research.

Investment Behavior

We also examined investments as a consumption behavior. The tables in Appendix C – Figure 13 features the tables associated with the investment behavior results. It was important to look at the participants' income first, because this directly affects investment behavior. The smaller income a person has, the less investment vehicles they will own; this was verified by our sample. There was no significant difference (p=.199) between the sensation seeking groups and income levels, thus any effects on investments from risk seeking levels is not confounded with income.

The risk level of investment was determined by a discussion with Peter Nigro, a finance professor at Bryant University who is an expert in investments. Investment riskiness was rated as follows (from least risky to risky):

- 1. Bank Deposits/CDs
- 2. Money Market Funds
- 3. T-Notes and T-Bills
- 4. Savings and Municipal Bonds
- 5. Mutual Funds
- 6. Real Estate
- 7. Stocks
- 8. Derivatives/Futures

First we looked at the riskiest investment a person owned. (Appendix C – Figure 13C) According to the Chi-Square analysis, there was no significant difference between riskiness of investments owned and sensation seeking category (p=.234). A second survey question asked subjects where they would invest a hypothetical windfall. This time there were statistically significant differences (p=.004). Higher risk takers tend to put this "easy money" into riskier forms of investments.

Professor Nigro noted that the level of sophistication on the part of the investor is also an important variable. Investing in the riskier vehicles requires more knowledge about investments; putting money into stocks is a higher level of investing than simple bank deposits. In order to control for this, we looked at level of education. (Appendix C – Figure 13) We can see that almost half of the low sensation-seeking group has a graduate or professional degree. This can be attributed to our sampling procedure, as a large number of people in our group came from the University's faculty. Also, because Bryant is traditionally a business school these professors probably have very good knowledge of financials and investments. These participants make more educated decisions about where to put their money, but the results are still telling that high risk-takers are willing to make riskier investments.

Gambling

Another consumption behavior we examined was gambling. Different gambling activities have different risks associated with them. According to the "British Columbia Partnership for

Responsible Gambling" the following odds and statistics apply to the gambling activities that our survey featured. There is a built-in house edge in every game. As the list shows, the statistical edges against the player will vary from game to game.

For instance, betting \$100 an hour on roulette, the player, in the long run will lose an average of \$5.60 an hour. When betting on horse races, one can expect to lose \$19 for every \$100 an hour. However, this is only an average and

Illustration 5 – The House Edge	
The House Edge	
Blackjack	2%-20%
Poulette	5.60%
Sot Machines	2.0 – 35%
Horse Pacing	19%

aggregate figure and should not be used as a guideline when betting. It does however give us a good idea about the riskiness of each activity. Experience playing these games will no doubt vary from this average. Poker is not included on this list. It is complicated to assign one specific value for the chance of winning in poker. Every hand is different, and even a weak hand can win if a player is adept.

The measure of success with lottery tickets is different, because of the nature of the game. These are pure odds, and they will not change with experience. Also these are the gambling activities that require the least involvement, as buying a lottery ticket takes much less effort

Illustration 6 – Odds of Winning	
Chances of Winning	
Lottery - 6/49	
Matching 3 numbers	1 in 57
Matching 5 numbers	1 in 55,492
Scratch tickets (Gold Rush)	
\$2	1 in 8.88
\$5	1 in 31

than engaging in a poker game (or any other casino activities) or preparing bets for various sports events. Based on the above information, we can see that a scratch ticket is essentially riskier than playing poker or roulette. However the risk of roulette and poker may be perceived as riskier, because of the level of participation and the amount of money risk.

The first thing that we looked at regarding gambling was the number of gambling activities each risk-taker group engages in. High sensation seekers do the most gambling (m=2.2), followed by medium (m=1.94) and low sensation seekers (m=1.42). Naturally, the next question is what kind of gambling activities these groups participate in.

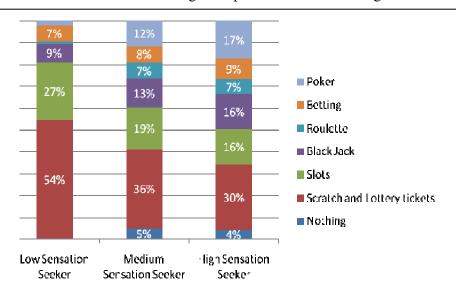


Illustration 7 – Sensation Seeking Groups and Their Gambling Activities

As we can see low sensation seekers most likely buy scratch tickets, which is the riskiest gambling activity in terms of return, but requires the least amount of money.

The last question we asked was about the amount of money these groups spend on their gambling activities. High sensation seekers spend the most money (Appendix C – Figure 14B), followed by medium and low sensation seekers. In summary, to investigate gambling activities, we looked at the number of different types of gambling activities participants engaged in, the specific type of gambling and the money spent on these activities. We have found the differences between groups were indeed significant in all variables.

Sports Activities

In order to determine the social perception of the riskiness of sports activities, a Q-Sort test was conducted, with 10 people in the Bryant University Library. Participants categorized sports as "Risky," "Moderately Risky," or "Not Risky." We assigned each category a multiplier (1.5, 1 and 0.5 respectively) and scores were calculated according to this formula: Sport Risk Score = [number of participants ranking the sport as risky*1.5] + [number of participants ranking the sport as not risky*0.5]. A rank-order was established based on the sport risk score (See Appendix C – Figure 15). This rank order provided the basis for the sport-risk categories, taking one standard deviation (std=2) up and down from the mean (m=9) score. The scores for the

categories were the following: Above 11: high-risk, 7-11: moderate risk, below 7: low-risk. An average sports score was calculated for each participant. The same risk-categories applied to average sports scores as to sports activities. The results were statistically significant and as expected (See Appendix C – Figure 16).

High sensation seekers both pursue riskier sports (Chi-square: p<.0005), and participate in more sports (ANOVA: p<.0005), and spend more money on their sports activities (Chi-square: p<.0005) (the majority reported spending more than \$1,500/year).

Age was significantly related to SS in our sample, so we examined whether age impacted participation in risky sports. The Chi-Square analysis indicated the difference between the age groups and the riskiness of the sports they participate in is not significant (p=.372). Therefore, it appears that although risk propensity, as measured by SSS-V, is measurably higher in young males, appears to be a rather stable personality variable.

DISCUSSION

We have observed effects of high risk-propensity in lifestyle choices and in consumption behavior. Our high sensation group was indeed different in virtually all behaviors that we examined. They seem to like driving a little faster – and because of that get more speeding tickets and get into accidents – and also have more sexual partners. Society might not see this as a desirable thing, but being somewhat of a "social-outcast" is part of the high sensation seeking lifestyle. (Celsi, et al., 1993) Using data from these behaviors such as speeding tickets can help marketers identify their selected target market, which is relevant in case of an extreme sports company or another product manufacturer that intends to serve these high sensation seekers. After identifying who these consumers are, the next step is to learn about their different consumption patterns, in order to appeal to them and encourage the purchase of the product/service.

The biggest implications for marketers of this study lay with the consumption patterns discovered. As expected, high sensations-seekers exhibit different patterns when it comes to purchasing. Our statistical analyses confirmed most of the hypotheses. The biggest difference was between the low and high sensation seeking group. We can conclude that our risk taker

group will be more likely to engage in impulse purchasing (as this was confirmed by both the "buying things on a whim" and "impulse purchases" variable). Marketers can leverage this knowledge if they are specifically interested in a high risk-propensity target group. Whether the product is chewing gum or a more sophisticated item; high sensation seekers are more likely to impulse purchase. High sensation seekers also are more likely to look at "shopping as a chore." The survey results indicated that they are less likely to make shopping lists. As discussed earlier, high risk-propensity individuals have a higher optimal level of stimulation, and this can be observed by their exploratory consumption behavior: not making shopping lists, and making impulse purchases (Steenkamp & Baumgartner, 1992). For high sensation seekers, everything is about the action. Behaving as risk-takers in their sports activities, as well as in their consumption behavior draws us closer to the conclusion that sensation-seeking is a personality variable.

An interesting finding that marketers will be able to leverage comes from the relationship between age and sports risk (See Appendix C – Figure 16). We have not found conclusive evidence that age affects participation in risky sports. This implies that sensation-seeking may change form instead of disappearing with age. Because of the obvious physical limits, the kind of sport may change, but will stay risky nonetheless. Future research is suggested on the topic, but the initial results are promising for marketers.

In conclusion, marketers should focus on psychographic instead of demographic segmentation when targeting consumers with high risk propensity.

Risk taker consumers are a viable market, high risk seekers compromised 19% of our sample and 7% of the non-skydiver sample. Furthermore this target spends substantially more on their high risk activities such as sports or gambling. After our research, we can conclude that there are opportunities for cross-selling, after successful access to this market segment. Some brands that could take advantage of that are: Red Bull, Underarmor, Burton, Quicksilver, etc. An effective communication strategy is crucial when accessing the consumers. Red Bull has been doing a very nice job with their unconventional marketing strategies, for example sponsoring extreme sports athletes, and organizing action sports events (i.e.: Red Bull Air

Day). Also the mentioned companies can develop products specifically geared towards sensation seekers.

Appendix A - The Survey

Hello: You are invited to participate in Gergely Nemo Nemeth's Honors Thesis Survey. You will be asked to complete a survey that asks questions about lifestyle and consumption. It will take approximately 10 minutes to complete the questionnaire. Your participation in this study is completely voluntary. There are no foreseeable risks associated with this project. However, if you feel uncomfortable answering any questions, you can withdraw from the survey at any point. It is very important for us to learn your opinions. Your survey responses will be strictly confidential and data from this research will be reported only in the aggregate. Your information will be coded and will remain confidential. If you have questions at any time about the survey or the procedures, you may contact Gergely Nemeth at by email at the email address specified below. Thank you very much for your time and support. Please start with the survey now by clicking on the Continue button below.

Each of the items below contain two choices, A and B. Please indicate which of the choices most describes your likes or the way you feel. In some cases you may find items in which both choices describes your likes or the way you feel. Please choose the one which better describes your likes and feeling. In some cases you may find items in which you do not like either choice. In these cases, mark the choice you dislike the least.It is important you respond to all items with only one choice. We are interested only in your likes or feelings, not in how others feel about these things or how one is supposed to feel. There are no right or wrong answers as in other kinds of tests. Please be frank and give your honest appraisal.

- 1. A. I like wild uninhibited parties.
- 2. B. I prefer quiet parties with good conversation.
- 1. A. There are some movies I enjoy seeing a second or even a third time.
- 2. B. I can't stand watching a movie that I've seen before.
- 1. A. I often wish I could be a mountain climber.
- 2. B. I can't understand people who risk their necks climbing mountains.
- 1. A. I dislike all body odors.
- 2. B. I like some of the earthy body smells.
- 1. A. I get bored seeing the same old faces.
- 2. B. I like the comfortable familiarity of everyday friends.
- 1. A. I like to explore a strange city or section of town by myself, even if it means getting lost.
- 2. B. I prefer a guide when I am in a place I don't know well.
- 1. A. I dislike people who do or say things just to shock or upset others.
- 2. B. When you can predict almost everything a person will do and say he or she must be a bore.
- 1. A. I usually don't enjoy a movie or a play where I can predict what will happen in advance.
- 2. B. I don't mind watching a movie or a play where I can predict what will happen in advance.
- 1. A. I have tried marijuana or would like to.
- 2. B. I would never smoke marijuana.
- 1. A. I would not like to try any drug which might produce strange and dangerous effects on me.
- 2. B. I would like to try some of the new drugs that produce hallucinations.
- 1. A. A sensible person avoids activities that are dangerous.
- 2. B. I sometimes like to do things that are a little frightening.

- 1. A. I dislike swingers.
- 2. B. I enjoy the company of real swingers.
- 1. A. I find that stimulants make me uncomfortable.
- 2. B. I often like to get high (drinking liquor or smoking marijuana).
- 1. A. I like to try foods that I have never tasted before.
- 2. B. I order the dishes with which I am familiar, so as to avoid disappointment or unpleasantness.
- 1. A. I enjoy looking at home movies or travel slides.
- 2. B. Looking at someone's home movies or travel slides bores me tremendously.
- 1. A. I would like to take up the sport of water-skiing.
- 2. B. I would not like to take up water-skiing.
- 1. A. I would like to try surf-board riding.
- 2. B. I would not like to try surf-board riding.
- 1. A. I would like to take off on a trip with no pre-planned or definite routes or timetables.
- 2. B. When I go on a trip I like to plan my route and timetable fairly carefully.
- 1. A. I prefer the down-to-earth kinds of people as friends.
- 2. B. I would like to make friends in some of the far out groups like artists or hippies.
- 1. A. I would not like to learn to fly an airplane.
- 2. B. I would like to learn to fly an airplane.
- 1. A. I prefer the surface of the water to the depths.
- 2. B. I would like to go scuba diving.
- 1. A. I would like to meet some persons who are homosexuals (men or women).
- 2. B. I stay away from anyone I suspect of being gay.
- 1. A. I would like to try parachute jumping.
- 2. B. I would never want to try jumping out of a plane with or without a parachute.
- 1. A. I prefer friends who are excitingly unpredictable.
- 2. B. I prefer friends who are reliable and predictable.
- 1. A. I am not interested in experience for its own sake.
- 2. B. I like to have new and exciting experiences and sensations even if they are a little frightening, unconventional or illegal.
- 1. A. The essence of good art is in its clarity, symmetry of form and harmony of colors.
- 2. B. I often find beauty in the clashing colors and irregular forms of modern painting.
- 1. A. I enjoy spending time in the familiar surroundings of home.
- 2. B. I get very restless if I have to stay around home for any length of time.
- 1. A. I like to dive off the high board.
- 2. B. I don't like the feeling I get standing on the high board (or I don't go near it at all).
- 1. A. I like to date members of the opposite sex who are physically exciting.
- 2. B. I like to date members of the opposite sex who share my values.

- 1. A. Heavy drinking usually ruins a party because some people get loud and boisterous.
- 2. B. Keeping the drinks full is the key to a good party.
- 1. A. The worst social sin is to be rude.
- 2. B. The worst social sin is to be a bore.
- 1. A. A person should have considerable sexual experience before marriage.
- 2. B. Its better if two married persons begin their sexual experience with each other.
- 1. A. Even if I had the money I would not care to associate with flighty persons like those in the jet set.
- 2. B. I could conceive of myself seeking pleasure around the world with the jet set.
- 1. A. I like people who are sharp and witty even if they do sometimes insult others.
- 2. B. I dislike people who have their fun at the expense of hurting the feelings of others.
- 1. A. There is altogether too much portrayal of sex in movies.
- 2. B. I enjoy watching many of the sexy scenes in movies.
- 1. A. I feel best after taking a couple of drinks.
- 2. B. Something is wrong with people who need liquor to feel good.
- 1. A. People should dress according to some standards of taste, neatness, and style.
- 2. B. People should dress in individual ways even if the effects are sometimes strange.
- 1. A. Sailing long distances in small sailing crafts is foolhardy.
- 2. B. I would like to sail a long distance in a small but seaworthy sailing craft.
- 1. A. I have no patience with dull or boring persons.
- 2. B. I find something interesting in almost every person I talk with.
- 1. A. Skiing fast down a high mountain slope is a good way to end up on crutches.
- 2. B. I think I would enjoy the sensations of skiing very fast down a high mountain slope.

What sports activities do you participate in?

- 1. Basketball
- 2. Bowling
- 3. Jogging/running
- 4. Archery
- 5. Boating
- 6. Motocross
- 7. Fishing
- 8. Soccer
- 9. Football
- 10. Baseball/Softball
- 11. Skiing/Snowboarding
- 12. Swimming
- 13. Fitness (spinning, aerobics, Pilates,
- weightlifting, etc.)
- 14. Skydiving
- 15. Field Hockey
- 16. Horseback riding
- 17. Rugby
- 18. Tennis
- 19. Lacrosse
- 20. Skating/Ice Hockey

- 21. B.A.S.E. Jumping
- 22. Pole Vaulting
- 23. Golf
- 24. Bicycling
- 25. Roller Skating
- 26. Track & Field
- 27. Bull Riding
- 28. Scuba Diving
- 29. Skateboarding
- 30. Other

Approximately how much money do you spend a year on your sports activities?

- 1. \$0
- 2. \$1 to \$100
- 3. \$101 to \$500
- 4. \$501 to \$1500
- 5. More than \$1500

How would you categorize the kind of automobile(s) you own?

- 1. Economy (Chevrolet Metro, Hyundai Accent etc.)
- 2. Compact (Dodge Neon, Ford Escort etc.)
- 3. Intermediate (Pontiac Grand Am, Toyota Corolla etc.)
- 4. Standard (Honda Civic, Toyota Camry, Nissan Altima etc.)
- 5. Full-Size (Ford Taurus, Dodge Intrepid etc.)
- 6. Premium (Pontiac Bonneville, Buick LeSabre etc.)
- 7. Luxury (Cadillac Sedan DeVille, Chrysler LHS etc.)
- 8. Sports Car (Chevrolet Camaro, Ford Mustange, Subaru Impreza etc.)
- 9. Sports Convertible
- 10. Minivan (Chevrolet Astro, Dodge Grand Caravan etc.)
- 11. Sports Utility (Chevrolet Blazer, Jeep Cherokee etc.)
- 12. Premium Sports Car (Ferrari F40, Porsche Boxter etc.)
- 13. Pick-Up Truck (Ford F-150, Toyota Tacoma etc.)
- 14. I do not own an automobile

How many speeding tickets have you gotten in the past 5 years?

- 1. None
- 2. 1-2
- 3. 3-5
- 4. 5+

How many automobile accidents have you been in the last 10 years?

- 1. 0
- 2. 1-2
- 3. 3-4
- 4. 5-6
- 5. 7 or more

What kind of investments do you have your money invested in?

- 1. Savings or Municipal Bonds
- 2. Bank Deposits and/or CDs
- 3. Money Market Funds
- 4. Treasury Notes, Treasury Bills
- 5. Real Estate
- 6. Stocks
- 7. Mutual Funds
- 8. Derivatives and Futures
- 9. I do not have any investments

You inherited \$100,000 and you have to invest it. What kind of investment vehicle would you put most of your money?

- 1. Bonds (low risk, low return)
- 2. Bank or Money Market deposits (low risk, low return)
- 3. Real Estate (moderate risk, moderate return)
- 4. Mutual Funds (moderate risk, moderate returns)

- 5. Stocks (high risk, high return)
- 6. Futures, Derivatives and Options (extremely high risks, extremely high returns)
- 7. Other

How many sexual partners did you have in your lifetime?

- 1. None
- 2. 1 to 2
- 3. 3 to 5
- 4. 6 to 10
- 5. 11 to 20
- 6. More than 20

Have you ever gambled or bought lottery tickets?

- 1. Yes
- 2. No

What kind of gambling activities do you engage in?

- 1. Scratch or lottery tickets
- 2. Slots
- 3. Poker
- 4. Black Jack
- 5. Roulette
- 6. Betting (Sports, Horses, Dogs, etc.)
- 7. Other

Approximately how much money do you spend on gambling or lottery tickets in a year?

- 1. Less than \$100
- 2. \$101 to \$500
- 3. \$501 to \$1,000
- 4. More than \$1,000

Please rate the degree to which you agree with the following statements.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I like buying things on a whim					
Shopping is a chore to me					
I enjoy trying out new brands of products					
I do thorough research before my purchases					
Shopping is like an adventure					
I usually make a shopping list					
I often make impulse purchases when shopping					

Select your gender

- 1. Male
- 2. Female

Where do you currently reside?

- 1. Alabama
- 2. Alaska
- Arizona
 Arkansas
- 5. California
- 6. Colorado
- 7. Connecticut8. Delaware
- 9. Florida
- 10. Georgia
- 11. Hawaii
- 12. Idaho
- 13. Illinois
- 14. Indiana
- 15. Iowa
- 16. Kansas
- 17. Kentucky
- 18. Louisiana
- 19. Maine
- 20. Maryland
- 21. Massachusetts
- 22. Michigan
- 23. Minnesota
- 24. Mississippi
- 25. Missouri
- 26. Montana

- 27. Nebraska
- 28. Nevada
- 29. New Hampshire
- 30. New Jersey
- 31. New Mexico
- 32. New York
- 33. North Carolina
- 34. North Dakota
- 35. Ohio
- 36. Oklahoma
- 37. Oregon
- 38. Pennsylvania
- 39. Rhode Island
- 40. South Carolina
- 41. South Dakota
- 42. Tennessee
- 43. Texas
- 44. Utah
- 45. Vermont
- 46. Virginia
- 47. Washington
- 48. Washington, D.C.
- 49. West Virginia
- 50. Wisconsin
- 51. Wyoming
- 52. Other

What is the highest level of education you have completed?

- 1. Grade school
- 2. High school
- 3. 2-yr college
- 4. 4-yr college
- 5. Graduate or professional degree

What is your age?

- 1. 18 or under
- 2. 19-25
- 3. 26-35
- 4. 36-45
- 5. 46-55
- 6. 56 or older

What is your occupation?

- 1. Military
- 2. Building Trades
- 3. Computer Industry
- 4. Business Management
- 5. Engineer
- 6. Student
- 7. Sales/Marketing
- 8. Administration
- 9. Retired
- 10. Medical

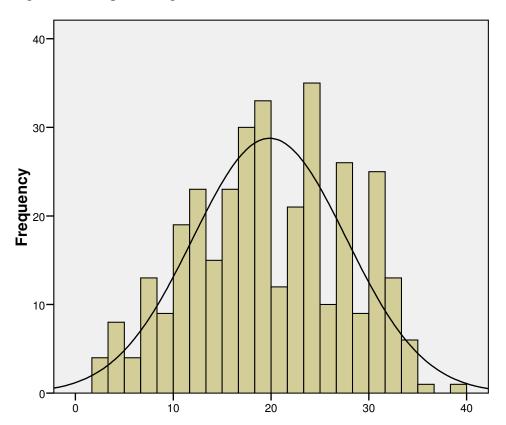
- 11. Aviation
- 12. Self-Employed
- 13. Education
- 14. Law Enforcement
- 15. Entertainment
- 16. Hospitality
- 17. Maintenance
- 18. Factory Worker
- 19. Unemployed
- 20. Other

What is your yearly household income?

- 1. Below \$25,000
- 2. \$25,000 to \$49,999
- 3. \$50,000 to \$74,999
- 4. \$75,000 to \$99,9995. \$100,000 or more

<u>Appendix B – Survey Sample Descriptive Statistics (SSS-V scores)</u>

Figure 1 – Sample Histogram



Mean =19.85□ Std. Dev. =7.859 N =340

Figure 2 – Risk Taker Group Assignment - Group Cross-tabulation

		C	group	Total
		Skydivers	Non-Skydivers	Sample
	Low Sensation Seeker	1	65	66
Risk Taker Group Assignment	Medium Sensation Seeker	76	133	209
	High Sensation Seeker	50	15	65
	Total	127	213	340

Figure 3 – Risk Taking and Gender

	Ge	ender	Total
Risk Taker Group Assignment		Female	
Low Sensation Seeker	15	47	62
Medium Sensation Seeker	90	114	204
High Sensation Seeker	45	19	64
Total	150	180	330

Figure 4 – Risk Taking and Education

Sensation Seeking and Education	Grade School	High School	2-yr College	4-yr College	Graduate or Professional Degree	Total
Low Sensation Seeker	1	12	9	12	28	62
Medium Sensation Seeker	1	43	27	54	79	204
High Sensation Seeker	0	18	10	19	17	64
Total	2	73	46	85	124	330

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.543(a)	8	.479
Likelihood Ratio	7.785	8	.455
Linear-by-Linear Association	2.380	1	.123
N of Valid Cases	330		

a 3 cells (20.0%) have expected count less than 5. The minimum expected count is .38.

Age and Sensation Seeking	25 and Under	26 to 35	36 to 45	46 to 55	56 or older	Total
Low Sensation Seeker	3	7	10	24	18	62
Medium Sensation Seeker	47	42	51	47	17	204
High Sensation Seeker	21	17	13	11	2	64
Total	71	66	74	82	37	330

Age and Sensation Seeking	25 and Under	26 to 35	36 to 45	46 to 55	56 or older	Total
Low Sensation Seeker	4%	11%	14%	29%	49%	19%
Medium Sensation Seeker	66%	64%	69%	57%	46%	62%
High Sensation Seeker	30%	26%	18%	13%	5%	19%
Total	100%	100%	100%	100%	100%	100%

<u>Appendix B – Lifestyle Variables</u>

Figure 5 - Sexual Partners

Risk Taker Group Assignment * Partners Crosstab		None	1 to 2	3 to 5	6 to 10	11 to 20	More than 20	Total	
Risk Taker Group Assignment	Low	Count	4	31	19	3	4	1	62
	Medium	Count	9	35	54	38	31	33	200
	High	Count	0	3	8	14	16	23	64
Total		Count	13	69	81	55	51	57	326

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	77.849(a)	10	.000
Likelihood Ratio	83.620	10	.000
Linear-by-Linear Association	65.263	1	.000
N of Valid Cases	326		

2 cells (11.1%) have expected count less than 5. The minimum expected count is 2.47.

Figure 6 – Substance Use

ANOVA		Sum of Squares	df	Mean Square	F	Sig.
Substance	Between Groups	433.644	2	216.822	137.572	0
	Within Groups	531.133	337	1.576		
	Total	964.776	339			

Doc	criptive Statistics					95% Conf	f. Interval		
Des	diplive dalisits	N	Mean	Std. Dev.	Std. Error	Lower	Upper	Min	Max
Substance	Low Sensation Seeker	66	0.5	0.809	0.1	0.3	0.7	0	3
	Medium Sensation Seeker	209	2.08	1.41	0.098	1.89	2.27	0	5
	High Sensation Seeker	65	4.12	1.083	0.134	3.85	4.39	0	5
	Total	340	2.16	1.687	0.091	1.98	2.34	0	5

Figure 7 – Driving Behavior

	Number			
Sensation Seeking and Speeding Tickets	None	1 to 2	3 or more	Total
Low Sensation Seeker	51	14	1	66
Medium Sensation Seeker	134	62	13	209
High Sensation Seeker	30	26	9	65
Total	215	102	23	340

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.554(a)	4	.002
Likelihood Ratio	16.838	4	.002
Linear-by-Linear Association	16.148	1	.000
N of Valid Cases	340		

a 2 cells (22.2%) have expected count less than 5. The minimum expected count is 4.40.

	Nu			
Sensation Seeking and				
Automobile Accidents	None	1 to 2	3 or more	Total
Low Sensation Seeker	40	25	1	66
Medium Sensation Seeker	121	78	10	209
High Sensation Seeker	25	33	7	65
Total	186	136	18	340

Chi-Square Tests

om oquaro rooto			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.841(a)	4	.019
Likelihood Ratio	11.899	4	.018
Linear-by-Linear Association	8.994	1	.003
N of Valid Cases	340		

a 2 cells (22.2%) have expected count less than 5. The minimum expected count is 3.44.

<u>Appendix C – Consumption Behavior</u>

Figure 8 – One Way ANOVA

ANOVA		Sum of Squares	df	Mean Square	F	Sig.
Whim (*)	Between Groups	15.656	2	7.828	5.894	0.003
	Within Groups	440.941	332	1.328		
	Total	456.597	334			
Chore (*)	Between Groups	11.631	2	5.816	3.217	0.041
	Within Groups	600.202	332	1.808		
	Total	611.833	334			
NewBrand	Between Groups	0.859	2	0.43	0.533	0.587
	Within Groups	267.541	332	0.806		
	Total	268.4	334			
Research	Between Groups	0.084	2	0.042	0.04	0.961
	Within Groups	350.411	332	1.055		
	Total	350.496	334			
Adventure	Between Groups	3.801	2	1.9	1.375	0.254
	Within Groups	458.838	332	1.382		
	Total	462.639	334			
ShoppingList (*)	Between Groups	35.738	2	17.869	13.314	0
	Within Groups	445.593	332	1.342		
	Total	481.331	334			
Impulse (*)	Between Groups	13.135	2	6.567	4.702	0.01
	Within Groups	463.719	332	1.397		
	Total	476.854	334			

Figure 9 – Descriptive Statistics for ANOVA

Door	rintivo Statistico					95% Conf	. Interval		
Dest	riptive Statistics	N	Mean	Std. Dev.	Std. Err	Lower	Upper	Min	Max
Whim	Low Sensation Seeker	63	3.02	1.055	0.133	2.75	3.28	1	5
	Medium Sensation Seeker	208	2.55	1.195	0.083	2.38	2.71	1	5
	High Sensation Seeker	64	2.34	1.101	0.138	2.07	2.62	1	5
	Total	335	2.6	1.169	0.064	2.47	2.72	1	5
Chore	Low Sensation Seeker	63	3.11	1.415	0.178	2.75	3.47	1	5
	Medium Sensation Seeker	208	2.88	1.369	0.095	2.69	3.07	1	5
	High Sensation Seeker	64	2.52	1.182	0.148	2.22	2.81	1	5
	Total	335	2.85	1.353	0.074	2.71	3	1	5
NewBrand	Low Sensation Seeker	63	2.63	0.829	0.104	2.43	2.84	1	5
	Medium Sensation Seeker	208	2.56	0.882	0.061	2.44	2.68	1	5
	High Sensation Seeker	64	2.69	1.006	0.126	2.44	2.94	1	5
	Total	335	2.6	0.896	0.049	2.5	2.7	1	5
Research	Low Sensation Seeker	63	2.44	0.894	0.113	2.22	2.67	1	5
	Medium Sensation Seeker	208	2.43	1.065	0.074	2.28	2.57	1	5
	High Sensation Seeker	64	2.47	1.023	0.128	2.21	2.72	1	5
	Total	335	2.44	1.024	0.056	2.33	2.55	1	5
Adventure	Low Sensation Seeker	63	2.86	1.105	0.139	2.58	3.14	1	5
	Medium Sensation Seeker	208	3.03	1.217	0.084	2.87	3.2	1	5
	High Sensation Seeker	64	3.2	1.101	0.138	2.93	3.48	1	5
	Total	335	3.03	1.177	0.064	2.91	3.16	1	5
ShoppingList	Low Sensation Seeker	63	2.14	0.998	0.126	1.89	2.39	1	5
	Medium Sensation Seeker	208	2.7	1.174	0.081	2.54	2.86	1	5
	High Sensation Seeker	64	3.2	1.25	0.156	2.89	3.52	1	5
	Total	335	2.69	1.2	0.066	2.56	2.82	1	5
Impulse	Low Sensation Seeker	63	2.97	1.164	0.147	2.68	3.26	1	5
	Medium Sensation Seeker	208	2.61	1.203	0.083	2.44	2.77	1	5
	High Sensation Seeker	64	2.33	1.128	0.141	2.05	2.61	1	5
	Total	335	2.62	1.195	0.065	2.49	2.75	1	5

Figure 10 – Multiple Comparisons – LSD

Multiple Comparisons Least Square Difference

						95% C	onf. Int.
Dependent Var.	(I) Risk Taker Group	(J) Risk Taker Group	Mean Diff(I-J)	Std. Err	Sig.	Lower	Upper
Whim	Low	Medium	.468(*)	0.166	0.005	0.14	0.79
		High	.672(*)	0.205	0.001	0.27	1.0
	Medium	Low	468(*)	0.166	0.005	-0.79	-0.1
		High	0.204	0.165	0.216	-0.12	0.53
	High	Low	672(*)	0.205	0.001	-1.07	-0.2
		Medium	-0.204	0.165	0.216	-0.53	0.12
Chore	Low	Medium	0.231	0.193	0.232	-0.15	0.6
		High	.595(*)	0.239	0.013	0.13	1.0
	Medium	Low	-0.231	0.193	0.232	-0.61	0.1
		High	0.364	0.192	0.059	-0.01	0.74
	High	Low	595(*)	0.239	0.013	-1.06	-0.13
		Medium	-0.364	0.192	0.059	-0.74	0.0
NewBrand	Low	Medium	0.072	0.129	0.575	-0.18	0.33
		High	-0.053	0.159	0.742	-0.37	0.26
	Medium	Low	-0.072	0.129	0.575	-0.33	0.18
		High	-0.125	0.128	0.331	-0.38	0.13
	High	Low	0.053	0.159	0.742	-0.26	0.37
		Medium	0.125	0.128	0.331	-0.13	0.38
Research	Low	Medium	0.017	0.148	0.911	-0.27	0.31
		High	-0.024	0.182	0.894	-0.38	0.33
	Medium	Low	-0.017	0.148	0.911	-0.31	0.27
		High	-0.041	0.147	0.781	-0.33	0.25
	High	Low	0.024	0.182	0.894	-0.33	0.38
		Medium	0.041	0.147	0.781	-0.25	0.33
Adventure	Low	Medium	-0.177	0.169	0.297	-0.51	0.16
		High	-0.346	0.209	0.098	-0.76	0.06
	Medium	Low	0.177	0.169	0.297	-0.16	0.51
		High	-0.169	0.168	0.314	-0.5	0.16
	High	Low	0.346	0.209	0.098	-0.06	0.76
		Medium	0.169	0.168	0.314	-0.16	0.5
ShoppingList	Low	Medium	559(*)	0.167	0.001	-0.89	-0.23
		High	-1.060(*)	0.206	0	-1.46	-0.66
	Medium	Low	.559(*)	0.167	0.001	0.23	0.89
		High	501(*)	0.166	0.003	-0.83	-0.18
	High	Low	1.060(*)	0.206	0	0.66	1.46
		Medium	.501(*)	0.166	0.003	0.18	0.83
Impulse	Low	Medium	.362(*)	0.17	0.034	0.03	0.7
		High	.640(*)	0.21	0.002	0.23	1.0
	Medium	Low	362(*)	0.17	0.034	-0.7	-0.0
		High	0.278	0.169	0.101	-0.05	0.6
	High	Low	640(*)	0.21	0.002	-1.05	-0.23
		Medium	-0.278	0.169	0.101	-0.61	0.0

Figure 11 – Q-Sort for Automobiles

Automobiles	Exciting	In-between	Boring	Score
Premium Sports Car (Ferrari F40, Porsche Boxter etc.)	10			15
Sports Car (Chevrolet Camaro, Ford Mustange, Subaru Impreza etc.)	9	1		14.5
Sports Convertible	9	1		14.5
Luxury (Cadillac Sedan DeVille, Chrysler LHS etc.)	8	2		14
Sports Utility (Chevrolet Blazer, Jeep Cherokee etc.)	4	6		12
Pick-Up Truck (Ford F-150, Toyota Tacoma etc.)	6		4	11
Premium (Pontiac Bonneville, Buick LeSabre etc.)	2	5	3	9.5
Full-Size (Ford Taurus, Dodge Intrepid etc.)	1	5	4	8.5
Standard (Honda Civic, Toyota Camry, Nissan Altima etc.)		6	4	8
Intermediate (Pontiac Grand Am, Toyota Corolla etc.)		5	5	7.5
Minivan (Chevrolet Astro, Dodge Grand Caravan etc.)	1	1	8	6.5
Compact (Dodge Neon, Ford Escort etc.)		2	8	6
Economy (Chevrolet Metro, Hyundai Accent etc.)			10	5

Figure 12 – Automobiles

Automobiles	Low SS	Medium SS	High SS
Premium Sports Car (Ferrari F40, Porsche Boxter etc.)	0%	2%	1%
Sports Car (Chevrolet Camaro, Ford Mustang, Subaru Impreza etc.)	0%	6%	11%
Sports Convertible	3%	1%	4%
Luxury (Cadillac Sedan DeVille, Chrysler LHS etc.)	1%	5%	1%
Sports Utility (Chevrolet Blazer, Jeep Cherokee etc.)	21%	20%	15%
Pick-Up Truck (Ford F-150, Toyota Tacoma etc.)	5%	9%	15%
Premium (Pontiac Bonneville, Buick LeSabre etc.)	3%	3%	3%
Full-Size (Ford Taurus, Dodge Intrepid etc.)	5%	5%	6%
Standard (Honda Civic, Toyota Camry, Nissan Altima etc.)	32%	21%	11%
Intermediate (Pontiac Grand Am, Toyota Corolla etc.)	15%	9%	8%
Minivan (Chevrolet Astro, Dodge Grand Caravan etc.)	7%	4%	8%
Compact (Dodge Neon, Ford Escort etc.)	5%	9%	10%
Economy (Chevrolet Metro, Hyundai Accent etc.)	3%	6%	6%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.076(a)	4	.007
Likelihood Ratio	16.437	4	.002
Linear-by-Linear Association	.169	1	.681
N of Valid Cases	305		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.08.

Figure 13 – Investments

A - Income and Sensation Seeking

Income a Sensation			\$25,000 to		. ,		
Seeking		Below \$25,000	\$49,999	\$74,999	\$99,999	more	Total
Low SS	Count	4	15	7	13	23	62
	%within	6.50%	24.20%	11.30%	21.00%	37.10%	100.00%
Medium SS	Count	22	35	27	47	73	204
	%within	10.80%	17.20%	13.20%	23.00%	35.80%	100.00%
High SS	Count	10	7	15	10	22	64
	%within	15.60%	10.90%	23.40%	15.60%	34.40%	100.00%
Total	Count	36	57	49	70	118	330
	%within	10.90%	17.30%	14.80%	21.20%	35.80%	100.00%

B – Number of Investments and Income

Number of Investments and Income		Below \$25,000	\$25,000 to \$49,999				
# of Investments	0	15	14	5	8	6	48
	1	11	22	9	13	16	71
	2	7	8	12	7	32	66
	3	3	6	16	13	22	60
	4	0	3	5	15	15	38
	5	0	2	2	6	8	18
	6	0	1	0	5	17	23
	7	0	1	0	3	1	5
	8	0	0	0	0	1	1
Total		36	57	49	70	118	330

C- Riskiest Investment

Riskiest Investment Owned	Low SS	Medium SS	High SS	Total
None	9	27	14	50
Bank or Money Market Deposits	3	15	5	23
T-Bills/ Notes and Bonds	4	27	3	34
Mutual Funds	13	24	13	50
Peal Estate	4	22	4	30
Stocks	32	87	24	143
Derivatives/ Futures	1	7	2	10
Total	66	209	65	340

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.133(a)	12	.234
Likelihood Ratio	15.507	12	.215
Linear-by-Linear Association	1.980	1	.159
N of Valid Cases	340		

a 4 cells (19.0%) have expected count less than 5. The minimum expected count is 1.91.

D - \$100,000 Would Be Invested In

I would invest my money in	Low SS	Medium SS	High SS	Total
Bank of Money Market Deposits	18	42	6	66
Bonds	3	15	4	22
Mutual Funds	28	79	24	131
Peal Estate	7	54	10	71
Stocks	7	12	12	31
Total	63	202	56	321

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.440(a)	8	.004
Likelihood Ratio	21.889	8	.005
Linear-by-Linear Association	7.092	1	.008
N of Valid Cases	321		

a 2 cells (13.3%) have expected count less than 5. The minimum expected count is 3.84.

Figure 14 – Gambling

A – Number of Gambling Activities

Descriptive Statistics for Number					95% Confide	ence Interval		
of Gambling Activities	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Low Sensation Seeker	66	1.42	0.895	0.11	1.2	1.64	0	4
Medium Sensation Seeker	209	1.94	1.494	0.103	1.73	2.14	0	6
High Sensation Seeker	65	2.2	1.67	0.207	1.79	2.61	0	6
Total	340	1.89	1.453	0.079	1.73	2.04	0	6

ANOVA

Number of Gambling Activities

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	21.040	2	10.520	5.103	.007
Within Groups	694.713	337	2.061		
Total	715.753	339			

B – Amount of Money Spent on Gambling

B – Amount of Money Spent on Gamoning									
Money Spent on									
Gambling	Less than \$100	\$101 to \$500	More than \$500	Total					
Low Sensation Seeker	53	9	1	63					
Medium Sensation Seeker	127	49	9	185					
High Sensation Seeker	38	12	8	58					
Total	218	70	18	306					

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.589(a)	4	.009
Likelihood Ratio	12.912	4	.012
Linear-by-Linear Association	8.407	1	.004
N of Valid Cases	306		

a 2 cells (22.2%) have expected count less than 5. The minimum expected count is 3.41.

Figure 15 – Q-sort for Sports Activities

Sports	Risky	Moderate	Non-Risky	Score
Skydiving	10			15
B.A.S.E. jumping	10			15
Bull Riding	10			15
Motocross	9	1		14.5
Football	8	2		14
Skiing/Snowboarding	7	3		13.5
Rugby	5	5		12.5
Lacrosse	5	5		12.5
Skating/Ice-Hockey	6	3	1	12.5
Scuba Diving	5	5		12.5
Skateboarding	6	3	1	12.5
Pole Vaulting	3	6	1	11
Archery	3	4	3	10
Boating	2	6	2	10
Soccer	3	4	3	10
Horseback riding	2	6	2	10
Basketball	1	6	3	9
Baseball/Softball	1	5	4	8.5
Bicycling		7	3	8.5
Roller Skating	1	5	4	8.5
Field Hockey		6	4	8
Swimming		5	5	7.5
Fishing		4	6	7
Fitness (spinning, aerobics, Pilates, weightlifting, etc.)		4	6	7
Track & Field		3	7	6.5
Jogging/running		2	8	6
Tennis		1	9	5.5
Golf		1	9	5.5
Bowling			10	5

Figure 16 – Sports Activities

A – Sports Risk Taken

	Sports Risk Category						
Sports Risks	Low Risk Sports	Moderate Risk Sports	High Risk Sports	Total			
Low Sensation Seeker	15	40	0	55			
Medium Sensation Seeker	27	156	22	205			
High Sensation Seeker	1	40	24	65			
Total	43	236	46	325			

Chi-Square Tests

· · · · · · · · · · · · · · · · · · ·		-	
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	49.644(a)	4	.000
Likelihood Ratio	52.493	4	.000
Linear-by-Linear Association	43.720	1	.000
N of Valid Cases	325		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.28.

B – Money Spent on Sports

Money Spent on Sports	Less than \$100	\$101 to \$500	\$501 to \$1500	More than \$1500	Total
Low Sensation Seeker	30	21	10	4	65
Medium Sensation Seeker	44	59	26	80	209
High Sensation Seeker	5	6	17	37	65
Total	79	86	53	121	339

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	60.853(a)	6	.000
Likelihood Ratio	68.559	6	.000
Linear-by-Linear Association	52.199	1	.000
N of Valid Cases	339		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.16.

C – Number of Sports Participation

Descriptive Statistics for					95% Confidence Interval			
Number of Sports	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Min	Max
Low Sensation Seeker	66	3.05	2.508	0.309	2.43	3.66	0	13
Medium Sensation Seeker	209	5.41	3.899	0.27	4.88	5.94	0	20
High Sensation Seeker	65	6.45	3.792	0.47	5.51	7.39	1	17
Total	340	5.15	3.805	0.206	4.74	5.56	0	20

ANOVA

Number of Sports

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	415.812	2	207.906	15.599	.000
Within Groups	4491.538	337	13.328		
Total	4907.350	339			

D – Age and Sports Risk Taken

Age and Sports Risk	Low Risk Sports	Moderate Risk Sports	High Risk Sports	Total
25 and Under	8	52	11	71
26 to 35	6	51	8	65
36 to 45	7	52	15	74
46 to 55	15	51	8	74
56 or older	5	25	3	33
Total	41	231	45	317

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.656(a)	8	.372
Likelihood Ratio	8.265	8	.408
Linear-by-Linear Association	2.241	1	.134
N of Valid Cases	317		

a 2 cells (13.3%) have expected count less than 5. The minimum expected count is 4.27.

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