

THE RELATIONSHIP BETWEEN INTERNET USAGE BY CATEGORY AND
PERSONALITY STRUCTURE

Cody Nathan Ramirez
B.A., California State University, Sacramento, 2006

THESIS

Submitted in partial satisfaction of
the requirements for the degree of

MASTER OF ARTS

in

PSYCHOLOGY

at

CALIFORNIA STATE UNIVERSITY, SACRAMENTO

SPRING
2010

THE RELATIONSHIP BETWEEN INTERNET USAGE BY CATEGORY AND
PERSONALITY STRUCTURE

A Thesis

by

Cody Nathan Ramirez

Approved by:

_____, Committee Chair
Dr. Lee Berrigan

_____, Committee Chair
Dr. Lawrence Meyers

_____, Committee Chair
Dr. Lisa Harrison

Date

Student: Cody Nathan Ramirez

I certify that this student has met the requirements for format contained in the University format manual, and that this thesis is suitable for shelving in the Library and credit is to be awarded for the thesis.

Lisa M. Bohon, Ph. D., Graduate Coordinator

Date

Department of Psychology

Abstract
of
THE RELATIONSHIP BETWEEN INTERNET USAGE BY CATEGORY AND
PERSONALITY STRUCTURE

by
Cody Nathan Ramirez

The Internet is a branch of media that has been growing in popularity recently and it has revolutionized the way people see the world. However, there is an insufficient amount of research to examine the relationship between this new technology and personality structure. This study examined the relationship of Internet usage by category with personality structure. Psychology students in lower-division psychology courses at California State University, Sacramento ($N = 283$) completed a packet of questionnaires (Internet Usage Questionnaire, Marlowe Crowne Social Desirability Scale, NEO Five-Factor Inventory, Sensation Seeking Scale, and four scales from the California Psychological Inventory). The results indicated modest correlations between several of the variables in the study. In addition, the results yielded several Internet categories and demographic variables that are statistically significant predictors of personality.

_____, Committee Chair
Dr. Lee Berrigan

Date

ACKNOWLEDGMENTS

This thesis would not have been possible unless my thesis chair, Dr. Lee Berrigan, whose encouragement, guidance and support from the conception of my idea to the final stages of writing enabled me to develop an understanding of this topic. I, therefore, thank him for his assistance and cooperation. I am grateful to Dr. Lawrence Meyers whose guidance on the analyses of the data helped me conduct the appropriate statistical calculations. I would like to thank Dr. Lisa Harrison for being a much-needed resource in the development and editing of this thesis.

I am appreciative to my friends Robert Brian, John Chavez, and David Chavez who have supported me through this arduous process and have always put a smile on my face when needed. I would also like to thank my sister Stevi Ramirez whose happy disposition has supported me these past few years.

Lastly, I am forever indebted to my loving parents, Rich and Lisa Ramirez, whose playful and compassionate personalities have been the scaffolding on my life to make me the person I am today.

TABLE OF CONTENTS

	Page
Acknowledgments	v
List of Tables.....	viii
 Chapter	
1. INTRODUCTION.....	1
2. CATEGORIES OF INTERNET USE	5
Category of Internet Use: Work	5
Employees and Internet Use	6
Social/Psychological Aspects of Internet Use	7
Category of Internet Use: Social-Networking	8
Category of Internet Use: Entertainment	9
Category of Internet Use: Gaming.....	10
Personal Research Websites	10
Category of Internet Use: Education.....	11
Cognitive Tutoring Systems	12
3. SELF-ESTEEM AND INTERNET USE.....	14
4. TELEVISION AND PERSONALITY	17
5. INTERNET USAGE AND PERSONALITY	20
6. THE PRSENT STUDY.....	23
Statement of Problem.....	24
Statement of Purpose	25

Hypotheses	25
7. METHOD.....	27
Participants	27
Measures.....	27
Procedures	31
8. RESULTS	33
Preliminary Analyses	33
Hypotheses	36
New Findings.....	38
9. DISCUSSION.....	40
Preliminary Analyses	40
Hypotheses	41
New Findings.....	42
Limitations & Implications of this Research.....	43
Appendix A. Demographics Page	47
Appendix B. Internet Usage Questionnaire (IUQ).....	48
References	51

LIST OF TABLES

	Page
1. Table 1 Characteristics of Sample by Gender.....	34
2. Table 2 Hours of Internet Usage by Category per Week (N = 283).....	35
3. Table 3 Bivariate Correlations between Categories of Internet Use	36
4. Table 4 Results of Standard Linear Multiple Regression Predicting Thrill and Adventure Seeking.....	39

Chapter 1

INTRODUCTION

The media has become a major contributor to the input an average person will receive on a daily basis (Mastronardi, 2003). Various aspects of the media such as newspapers, television, magazines, radio, roadside advertisements, and even the Internet are available for continuous consumption. For many Americans, the media is the source of our information from watching CNN to reading the latest blog from somewhere around the world. More now than ever, these various sources of the media are affecting more of our lives. For example, television has become one of the biggest sources of American media consumption. Ever since its inception, television has been an integral part of our society and television consumption has become a normal part of American society. In fact, Mastronardi (2003) wrote about the statistics for young Americans and their media consumption when she said:

In a typical U.S. home, the television set is in use for almost 7 hours in a day, and even though Internet use is rapidly gaining popularity among young people, television remains the dominant media form they use today...By the time a 7-year-old child reaches age 70, they will have spent 7 to 10 years of their lives watching television. (p. 84)

These statistics show the ever increasing impact television has on society and our culture. In addition, prior research by Brown, Steele, & Walsh-Childers (2004) indicated that teens in the United States spend half their waking hours engaging with some form of the media. Basically, in the course of an average American's day, individuals will inevitably come into contact with the media.

Although television consumption is at an all time high (Nielsen Company, 2009), television is not the only form of media that is consumed by Americans. With the creation of new devices such as cell phones with Internet applications, Internet consumption is growing and, in many cases, substituting many functions that television still offers to individuals. More specifically, the world is entering a digital age where computers and the Internet are being used more often and this has revolutionized the way individuals see the world. Now that the media is using different outlets for consumption with the adaptation of newer technologies, research needs to be completed to examine the role of media consumption and how it relates to individuals.

Americans now are using the Internet more for numerous reasons, and this is having a growing effect in the lives of individuals. Based on the fourth quarter data from The Nielsen Company (2009), more individuals are using the Internet than ever. In fact, Internet usage has increased by 3.3% in one year from the third quarter of 2007 to the fourth quarter of 2008. Overall, the numbers of users two years of age and older has increased from 156,323 (in 000's) to 161,525 (in 000's). Additionally, the use of a mobile phone has increased from 224,495 (in 000's) in the third quarter of 2008 to 228,920 (in 000's) in the fourth quarter of 2008. There have also been increases in the amount of time that individuals use the Internet. In the span of one year, individuals have increased the amount of time spent on the Internet by approximately one hour per month or 3.6%. Collecting data on Internet consumption is new to The Nielsen Company, but certain trends are appearing based on the data received thus far. For example, watching video on the Internet per month has increased by approximately 22 minutes from the third quarter

of 2008 to the fourth quarter of 2008 (Nielsen Company, 2009). Additionally, mobile subscribers watching video on a mobile phone increased viewing per month by five minutes from the third quarter of 2008 to the fourth quarter of 2008 (Nielsen Company, 2009). These data indicate that Internet consumption is a growing trend which will likely continue to increase (Nielsen Company, 2009).

Based on the current data, individuals over the age of two devote numerous hours to media such as television and Internet. Overall, individuals over the age of 12 spend at least 11 hours or more on the Internet (Nielsen Company, 2009). However, some age groups use the Internet more than others. Individuals between the ages of 25 and 34 dedicate over 25 hours per month to using the Internet (Nielsen Company, 2009). Individuals between the ages of 35 to 54 use the Internet, on average, 37 hours in a month (Nielsen Company, 2009). Although it has not been investigated, middle aged individuals may use the Internet more frequently due to more available access to the Internet at work and at home. Conversely, teenagers and young adults do not use the Internet as much. Individuals between ages 12 and 24 only use the Internet approximately 11 hours per month (Nielsen Company, 2009). This can be due to less available access to places that have Internet or the cost of Internet use and maintenance on a cell phone or computer. However, teenagers and young adults do consume more online videos than do older individuals: 18 to 24 year olds watch five hours of video per month on the Internet whereas other ages watch substantially less (Nielsen Company, 2009). Adolescents (12 to 17 years of age) who subscribe to the Internet via a mobile phone watch the most video on their devices, approximately six hours per month. All other ages watch substantially

less video on their cell phones, approximately two to three hours a month (Nielsen Company, 2009).

Chapter 2

CATEGORIES OF INTERNET USE

Category of Internet Use: Work

Individuals do not use the Internet for one purpose only. One of the biggest uses of the Internet in the modern world has been in the workplace. Businesses that have been accustomed to using paper documents are now becoming paperless through new technologies. Also, companies use computers and the Internet for information retrieval, data analysis, programming, graphic design, and communication through email and online conferencing (Liaw, 2007). In particular, networking between businesses and individuals has revolutionized business communication. The biggest breakthrough that has changed communication is the use of email for employee communication. Ting and Grant (2005) examined the Internet in the workplace and discovered that the majority (99%) of individuals who took the survey reported using the Internet for email communications and the World Wide Web (WWW). More than half of the respondents reported using the intranet, which is an internal network between all employees in the workplace (Ting & Grant, 2005). The remaining uses of the Internet in the workplace have been for work newsgroup, File Transfer Protocol (FTP), and listserv (electronic mailing list) purposes (Ting & Grant, 2005).

In regard to employees' Internet usage, there are substantial differences in terms of the size of the organization. Employees of larger organizations are inclined to use the Internet more than employees of smaller organizations (Ting & Grant, 2005). The main reason why larger corporations use the Internet more is geographic. Many large

organizations are spread over the world. A fast and effective way to communicate locally and globally is through email and Internet use. However, smaller organizations use the Internet more for routine tasks than do individuals in larger organizations (Ting & Grant, 2005).

Employees and Internet Use

Since the Internet is a tool that can be used for several reasons other than business, Ting and Grant (2005) used self-reports when asking respondents about other uses of the Internet at work. Thirty percent of the respondents indicated they have used the Internet for personal purposes. This number is an approximation due to self-reporting. The number of instances may be underestimated due to underreporting; individuals may have misrepresented their self-report (Ting & Grant, 2005). In addition, employees are less likely to report personal use of the Internet when the corporation is larger. Larger organizations may be more aware of legal risks regarding employee use of the Internet (Ting & Grant, 2005). However, The Nielsen Company (2009) found that individuals watch more online videos during the weekdays than during the weekend: the highest volume of individuals (65%) viewing online videos occurred between 9am-5pm Monday through Friday. On the other hand, the highest volume of individuals (51%) viewing online videos occurred between 6am-8pm on weekends. Based on this data, it is interesting that 30% of individuals who took the survey indicated they do not use the Internet for personal reasons yet the majority of time spent on the Internet is during the day when most individuals are at work. However, employers are not completely naïve regarding what employees do on the Internet. Sixty-two percent of the respondents

reported that their employers have policies on personal use of the Internet. “Fewer employees (28%) reported that their organizations have any formal policy to restrict the overall amount of time employees can spend on the Internet. Only 26% reported that their employers have formal policies ensuring the privacy of employees Internet activities and communications” (Ting & Grant, 2005, p. 327).

Legal ramifications can ensue due to the material that can be seen over the Internet and many organizations protect themselves: “Seventy percent of our respondents reported that their employers have formal policies to restrict illegal and inappropriate email content” (Ting & Grant, 2005, p. 327). Policies have also been created to restrict disclosure of confidential materials through the Internet; however, less than half of respondents (43%) reported that their employers have policies on disclosure. To protect organizations from lawsuits, security safeguards such as virus and inappropriate site scans have been initiated on business networks (Ting & Grant, 2005). Eighty-five percent of the respondents from Ting and Grant (2005) reported having such programs on their computers placed there by their employers.

Social/Psychological Aspects of Internet Usage

The Internet has revolutionized the way individuals connect socially with each other. Kiesler, Siegal, and McGuire (1984) have listed some social psychological aspects of computer mediated technology. For one, many online users may be drawn to the Internet because there are fewer status and position cues. Everyone is equal on the Internet. There is no hierarchal status where individuals must abide by all the rules (Kiesler, Siegal, & McGuire, 1984). In fact, high status individuals may have less

influence on the web. There is also a phenomenon called the “disinhibition effect” that has been used to describe certain types of behaviors individuals will show over the Internet. The disinhibition effect is when an online user will say something over the Internet that he or she would not say in his or her own life in the real world (Niemz, Griffiths, & Baynard, 2005). There are a variety of reasons why individuals would succumb to this effect. A primary reason may be the fact that anyone can say anything and anonymity can still be maintained. Since everyone is faceless on the Internet, the fear of public disgrace for what is being written, seen, and heard diminishes. It has also been shown that the disinhibition effect has the interaction factors of anonymity and invisibility (Niemz, Griffiths, & Banyard, 2005). Based on these effects of behavior due to Internet use, it is no surprise to find that individuals disclose more personal information about themselves compared to face-to-face communication (Joinson, 2001). For example, anonymity is a reason why online users would present more personal information. When an individual is online, a shift in personal awareness occurs. Public self-awareness is reduced while private self-awareness increases.

Category of Internet Use: Social-Networking

The Internet has also change the social lives of individuals. Individuals can now use the Internet to find relationships that are platonic. Social networking websites like MySpace, Facebook, Friendster, and Twitter are Internet locations that facilitate a new form of social interaction between individuals. The relationships that may develop between users of these sites can range from superficial acquaintanceships to deep, meaningful, and long lasting friendships (Buffardi & Campbell, 2008). In addition, social

networking websites offers a service where individuals can create their own profile for public viewing. Personal control is the difference between these sites and others because users can upload pictures, write blogs, and even add music to their profile.

Communication is another application of social networking sites where individuals can use “sound-byte” communication (i.e., comments and wallposts) (Buffardi & Campbell, 2008). This is another way to share information, pictures, and feelings through a website. Still, this is not the only reason why individuals use the Internet. The Internet has an appeal which can attract certain types of individuals. Individuals who have similar interests can join groups or online communities. Social-networking sites like this enable individuals to communicate freely with others regarding specific areas of interests.

Category of Internet Use: Entertainment

The Internet, however, is not used for the sole purpose of networking. There is a lighter side of the Internet in which individuals use it as a form of entertainment. Entertainment websites are designed to give individuals pleasure and/or relaxation. In addition, the audience may participate in the activity passively as in watching video or reading an article, or actively as in playing a game. Websites dedicated to entertainment are becoming more common. The Internet is a place now where an individual can choose from various entertainment options. For example, there are sites dedicated to renting and even watching movies that are streamed to the individual’s computer through the Internet. Also, individuals can watch amateur home videos through websites such as YouTube.

Internet Use: Gaming

Another aspect of the entertainment category in Internet use is gaming. Video games have always been in the forefront of controversy in parents minds since their inception. Willoughby (2008) reported that adolescents in high school use the Internet more frequently than computer games: an average of one to two hours a day is dedicated to the Internet whereas less than an hour is used playing video games. The same study found gender (being male) and lower parental education were strong predictors of frequency of computer use. Also, weaker academic orientations predicted frequency of computer use.

The Internet has changed the way individuals play video games, which have had both negative and positive effects on adolescents. Anderson and Bushman (2001) found a relationship between playing a violent video game and aggressive behavior. In addition, Parker, Taylor, Eastabrook, Schell, & Wood (2008) found that addiction-related behavior problems such as video/computer game and Internet use are increasing in adolescents. Conversely, positive cognitive and social development aspects of the Internet and gaming have been found. Subrahmanyam, Kraut, Greenfield, & Gross (2000) found a relationship between computers and increased visual intelligence skills.

Personal Research Websites

In addition, information can be found over the Internet. Information types of websites are available for individuals who use the Internet as a tool to know information about anything important to the person. On the website for Google, individuals can use a search engine to find information on an endless number of topics. Wikipedia is a web-

based encyclopedia where anyone can change the information that has been given.

Endless amounts of information can be found whether it is actually true or false.

Category of Internet Use: Education

In addition, parents have been reported buying computers for educational purposes; educational institutes have also supported the use of technology to teach students (Turow, 1999; Wood, Mueller, Willoughby, Specht, & DeYoung, 2005).

Computer games have also been linked to children's spatial performance skills, reading skills, and academic performance (Nichols, 1992; Subrahmanyam & Greenfield, 1994).

Computers and the Internet have changed the way students learn at any stage of their education. For example, locating articles for a potential study used to require weeks to do. Now, those articles can be accessed via educational websites and, within seconds, hundreds of peer-reviewed articles can be identified. This technology is growing with the advent of newer computers and faster Internet connections.

Another example of the influence of computers in education is the new software programs available. Software programs such as SPSS can calculate complex statistical procedures that used to require days to compute and interpret manually. The Internet has revolutionized teaching classes to students as well. Educational institutions are now using this new form of technology in their curriculum. It has come to the point where individuals don't need to actually go to the college to take a class. Online classes are now prevalent at colleges and universities.

Cognitive Tutoring Systems

The Internet does not just affect the classes, however; it also affects tutoring and the way students learn. In fact, cognitive tutoring systems (CTS) have been implemented with college students with fascinating results. CTS systems are computer based tutor programs that provide individualized instruction to students. Cognitive tutoring systems have helped individuals with improving abstract thinking in word problem solving (Wheeler and Regian, 1999). Also, CTSs emulate human teaching using empirically supported modern learning theories (Wheeler and Regian, 1999). “Research has shown that private tutoring (by humans) can increase learning by two standard deviations beyond group methods of instruction” (Wheeler and Regian, 1999, p. 244). Although they are not as effective as human tutors, CTSs have been shown to be better than classroom instruction alone (Wheeler and Regian, 1999).

Wheeler and Regian (1999) studied one particular CTS program with interesting results. The WPS is a type of CTS that has the goal of teaching students to analyze and complete word problems in five steps: “(1) identify the goal of the problem; (2) identify the values necessary to solve the problem; (3) make an equation; (4) solve the equation; and (5) answer the question using the appropriate solution value and units of measure” (Wheeler and Regian, 1999, page 245). Unlike other CTS programs, this program is only supposed to be used as an additional source in helping students learn how to solve word problems (Wheeler and Regian, 1999). In the WPS tutoring system, there are 24 modules which evaluate, for example, different aspects of math such as algebra. Each module uses a wide variety of teaching methods (animation, graphics, and text) to aid the students

with their studies (Wheeler and Regian, 1999). “The WPS Tutor is pedagogically based on five cognitive theoretical foundations, including learning by practice, elaboration, categorization, mastery, and induction” (Wheeler and Regian, 1999, page 245). The WPS Tutor did very well in helping students improve their word problem solving skills. The Wheeler and Regian (1999) study compared students who used the WPS Tutor to students without the tutor. In the post-test, treatment group students scored an average of 65%, placebo group students 45%, and control group students 51% on word problems [$F(2, 629) = 42.58, p < 0.001$]. It appears that the WPS Tutor helps students improve various skills. However, much like other CTS systems, the WPS Tutor should be used as a supplemental tutor to an actual class for students to improve their skills (Wheeler and Regian, 1999). Through programs such as CTS systems, researchers have learned the positive potential of what the Internet and computers can have on individuals. Nevertheless, more research needs to be conducted to examine the full potential of the Internet in the college environment.

Chapter 3

SELF-ESTEEM AND INTERNET USE

As the Internet grew in popularity, so did the belief that high amounts of Internet usage may eventually lead to social isolation and lower self-esteem. The relationship between self-esteem and Internet usage by category has been investigated with varying results. On one level, there are studies that suggest that obsessive online usage is an addiction, which would need to be treated as such. Since low self-esteem has been linked to addictive behavior, Internet usage may be linked to these concepts as well (Armstrong, Phillips, & Saling, 2000). The American Psychological Association does not recognize “Internet Addiction” as a disorder at the present time, but there has been research that indicates a compulsivity aspect to Internet use (Armstrong, Phillips, & Saling, 2000). Whether this may be called an addiction or a compulsion, the fact of the matter is there may be certain individuals who may overuse the Internet. This may be due to lower self-esteem.

Research is currently being conducted to examine the relationship between Internet usage and self-esteem. Lanthier & Wingham (2004) found an association between negative aspects of the Internet (e.g. negative thoughts, feelings, and experiences) and poor college adjustment. This makes sense because, in terms of individuals with low self-esteem, Armstrong, Phillips, & Saling, (2000) wrote: “Individuals with low self-esteem will be likely to focus on negative evaluations. Also, they are suspicious of praise and interpret evaluative information in a manner which reinforces their negative self-evaluations” (p. 540). In addition, loneliness and depression

have been reportedly linked to increased Internet use (Amichai-Hamburger & Ben-Artzi, 2003; Moody, 2001; Ybarra, Alexander, & Mitchell, 2005). On the Internet, there is a sense of depersonalization due to the lack of face-to face interactions between individuals. Individuals with lower self-esteem may be more prone to use the Internet because of the depersonalization aspect. Since individuals with low self-esteem focus on negative evaluations, they may use the Internet more because individuals do not get evaluated on the Internet. Kraut et al. (1998) have also found an association between Internet use and declines in both well-being and size of one's adolescent social circle over a period of two years. Results obtained from that study were small but significant. As research continues, a trend is appearing that may disprove previous research regarding negative aspects of the Internet. Kraut et al. (2002) conducted another study which did not find significant negative effects of Internet use. Current research has found contradictions regarding adverse effects of Internet use. Gross (2004) evaluated a sample of 7th and 10th grade students on Internet use and well-being and did not find an association between the two (Gross, 2004). Skull (1999) found that computer difficulties, with added stresses such as time and goal pressures, will heighten anxiety; this will lead a person to have a negative experience of the computer itself. Chua, Chen, & Wong (1999) found that the more competent a person is on a computer, the less likely he or she will have computer anxiety. Confidence and computer skills were a key factor in the last two studies. If individuals feel confident to use the computer, they may not be anxious on the computer. As access to the Internet has become more readily available through new technologies like cell phones and portable computers, individuals may become more

computer-literate and more comfortable using a computer and the Internet. Based on previous research (Wu & Clark, 2003), Internet usage does affect the lives of individuals who use it. The next step is to link Internet usage with personality to provide more information regarding the growing technological world.

Chapter 4

TELEVISION AND PERSONALITY

Limited research has been conducted on the topic of Internet usage and personality. However, there have been numerous studies of the relationship of a similar media outlet, television and personality. Internet use and television use coincide with each other as well: 31% of Internet activity occurs when consumers are also watching television (Nielsen Company, 2009). Based on investigations of television usage and personality, predictions can be made regarding future research on Internet usage and personality. Several studies (American Psychological Association, 1993; Sege & Dietz, 1994) have shown a relationship between television viewing and violent behavior in children. In addition, children who are heavy television viewers (i.e. five to six hours in a day) have been shown to have symptoms of psychological trauma as well as aggressive behavior (Singer, Slovak, Frierson, & York, 1998). To add to the problem, television programs that may positively influence children are not effective and/or are hard to find (Potts, Runyan, Zerger, & Marchetti, 1996).

A literature review of several studies (Gunter & Furnham, 1986; Aluja, 2000; Aluja & Torrubia, 1998; McIlwraith, 1998; Weaver, 1991; Zillmann & Weaver, 1997; Zuckerman & Litle, 1986) was conducted to examine the relationship between personality traits and TV-related preferences and experiences. Using a three-factor model of personality [i.e. the Eysenck Personality Questionnaire (EPQ)], the literature review found that there was a relationship between personality traits and TV-related preferences and experiences with adolescent and adult samples. These studies found that an

individual with high psychoticism tended to recall violent news (Gunter & Furnham, 1986) and had a higher preference for violent programs (Aluja, 2000; Aluja & Torrubia, 1998; Weaver, 1991; Zillmann & Weaver, 1997; Zuckerman & Litle, 1986). The literature review also found that high neuroticism and introversion were also associated with a preference for violent programs (Aluja & Torrubia, 1998; Gunter & Furnham, 1986) and with a more frequent self-labeling as “TV addict” (McIlwraith, 1998).

Persegani, et al. (2002) also examined television and personality structure of children with interesting results. Not surprisingly, 306 children (98.7%) watched television every day. The majority of the children personally identified with a TV character which they stated they would like to emulate. Gender differences were also identified. Girls chose characters based on external features and described them as beautiful, nice, strong and courageous. Boys chose action based characters based on “good guys” (Persegani et al., 2002). Much like the girls, boys chose characters based on external features, and described them with words such as strong, nice, physically skilled, beautiful, and courageous. With regard to personality, 16.1% of the children who scored high on extroversion, agreeableness, and emotional instability reported three or more adverse effects after viewing a shocking television scene. Several analyses of variance were also conducted revealing a significant main effect of TV-viewing duration on the Big-Five dimensions of personality structure as defined by Costa & McCrae (1992) (Peregani et al., 2002). Post hoc comparisons indicated differences in personality structure between children who spent two or more hours per day watching television and children who spent less than one hour watching television (Peregani et al., 2002). Specifically, children

who watched television more frequently displayed lower scores on Agreeableness, Conscientiousness and Openness to Experience, and higher scores on Emotional Instability than did children who did not spend as much time watching television (Peregani et al., 2002). Based on this research, television appeared to have an impact on the lives of individuals. Since the Internet is similar to television in regard to the input that is being consumed by users, there may be an association between Internet usage and personality as well. The problem is that there has not been much research on the topic and the studies that have been conducted are not entirely scientific.

Chapter 5

INTERNET USAGE AND PERSONALITY

Previous research (Wu & Clark, 2003) has shown that personality measures associate well with other measures that include daily measures of activities. Wu & Clark (2003) have demonstrated that personality traits have identifiable behavioral correlates to several daily behaviors. For example, Wu & Clark (2003) found: “persons who scored high on trait aggression scales more frequently reported engaging in such behaviors as hitting people and things, getting into arguments, and losing their temper or ‘blowing up’ over the two-week period of the study” (p.247).

Landers and Lounsbury (2006) addressed the relationship between the Big Five personality traits and Internet usage by Internet category. These authors also used correlation analyses to determine relationships between narrow personality traits (optimism, tough-mindedness, and work drive) and overall Internet usage. They also investigated whether the narrow traits added incremental validity beyond the Big Five traits in accounting for overall Internet usage.

Landers and Lounsbury (2006) assessed self-report of Internet usage using an eight-point likert scale (from less than one hour per week to ten hours a day). They asked participants to indicate the percent of time they spend on a certain aspect of the Internet. To assess Internet usage, Landers and Lounsbury (2006) defined and separated Internet usage into three categories: communication, leisure, or academic. According to the authors (2006), the communication category included activities like email, networking sites (Myspace.com, Facebook.com), and chatting sites. Leisure activities included

entertainment sites (Youtube.com, music or shopping), while the academic category was more focused on research or online courses. For each category, participants indicated how much time as a percentage they spent on each activity. For example, a participant may spend 60% on academic, 30% on leisure, and 10% on communication.

Of the personality traits that were used for the analysis in the Landers and Lounsbury (2006) study, several had significant relationships with Internet usage. Total Internet usage was negatively related to agreeableness ($r = -0.23, p < .05$), conscientiousness ($r = -0.21, p < .05$), extraversion ($r = -0.21, p < .05$), openness ($r = -0.22, p < .05$), and work drive ($r = -0.26, p < .05$) (Landers, Lounsbury, 2006). Only one personality trait was positively related to Internet usage: tough-mindedness ($r = 0.20, p < .05$). To determine the validity of using narrow personality traits in the analysis, regression analyses were performed with the variables. Results of a hierarchical regression analysis indicated that work drive added significantly to extraversion and conscientiousness in the prediction of total Internet usage, ($R = 0.285, p < .01$) (Landers, Lounsbury, 2006). Conscientiousness and work drive were negatively related to the amount of time spent in the leisure category of Internet Usage ($r = -0.18, p < 0.05$, and $r = -0.24, p < 0.01$, respectively) (Landers, Lounsbury, 2006). Conscientiousness differed because it was positively related to the amount of time spent in the academic category of Internet Usage ($r = 0.18, p < 0.05$) (Landers, Lounsbury, 2006). These results have led researchers to pose more questions on the topic of Internet usage and more specifically Internet category and its relationship to personality.

Previous research has been conducted to evaluate these issues, but the designs of the studies have not been rigorous. Hamburger & Ben-Artzi (2000) studied personality traits of Internet users. Participants provided self-report of their daily Internet usage and their personality. The Eysenck Personality Inventory (EPI) (Eysenck & Eysenck, 1964) was used to assess the participants' personalities. There were significant differences between the personality traits (Hamburger & Ben-Artzi, 2000). Extraversion was found to be positively related to use of Internet leisure services, whereas neuroticism was negatively related to information services use of Internet for men (Hamburger, Ben-Artzi, 2000). The opposite was apparent for women. For women, extraversion was negatively related and neuroticism positively related to social aspects of Internet usage (Hamburger, Ben-Artzi, 2000).

The Hamburger and Ben-Artzi (2006) study provided much information about the personalities of Internet users in general. However, these researchers did not fully examine the amount of time spent on the Internet. In addition, they did not examine the numerous categories of Internet usage that individuals may engage in (e.g. communication or social aspects). Finally, they only used one measure of personality. To obtain more comprehensive results, two or more personality measures would be needed.

Chapter 6

THE PRESENT STUDY

The present study replicated several aspects of Landers and Lounsbury (2006) as well as added more information to it. Similar to the Landers and Lounsbury (2006) study, the present study was conducted at a university with undergraduate students. Since the majority of universities are transferring into the digital age, the students were expected to be well versed in computers and the Internet. Similar to other studies (Hamburger, Ben-Artzi, 2000; Landers and Lounsbury 2006; Wu & Clark, 2003), the present study used participants' self-reports to determine Internet usage. Previous research had limited categories of Internet use. For example, Landers and Lounsbury (2006) defined and separated Internet usage into three categories: communication, leisure, or academic. Due to the growing applications on the Internet, three categories are not enough to examine the full nature of what the Internet can offer. Internet usage and each of its categories is the key variable in this study. Therefore, the categories and the definitions of those categories need to be detailed and all-encompassing. For purposes of the present study, participants reported the amount of hours per week they would spend on ten specific Internet categories: Communication, Dating, Education, Entertainment, Personal Business, Personal Research, Shopping, Social Networking, Work/Business, Other (item was open-ended).

In addition, previous studies also used scaled measurements to determine Internet usage. Landers and Lounsbury (2006) assessed self-report of Internet usage using an eight-point likert scale (from less than one hour per week to ten hours a day). This limits

the participants to precise constraints on the amount of time an individual spends in a given week. The measurement would not be entirely accurate. For this study, participants indicated the number of hours that they normally spend on certain Internet categories in a given week on a continuous scale.

Personality is a broad concept that contains numerous dimensions. The present study used a personality instrument (NEO-FFI) that allowed the Big Five personality traits to be assessed (Landers, Lounsbury, 2006). The remainder of the present study varied from Landers and Lounsbury (2006) due to weaknesses in their study. The main weakness was that Landers and Lounsbury (2006) only used one personality measure. Using only one personality measure would not make sense because this would not provide any comparison measures. To correct this, the present study employed scales from two personality measures: the California Psychological Inventory (Gough, 1987) and the NEO Five-Factor Inventory (Costa & McCrae, 1992). The present study added two additional scales to gain further information regarding Internet usage and personality. The Sensation Seeking Scale (Zuckerman, 1979) was used to examine the relationships between individuals who are described as sensation seeking and Internet usage. Also, the Marlowe Crowne Social Desirability Scale (1960) was used to assess participants who primarily provided socially desirable answers to the topic of Internet use and personality.

Statement of Problem

The problem facing Internet research today is a lack of empirical research on Internet usage and its correlates. The reason for the lack of research is that the Internet is new technology in its relative infancy. During its beginning stages, the Internet was only

available to a small number of individuals. Currently, the Internet is being used by more individuals. Since the Internet is becoming a driving force in modern media, research needs to be conducted to discover the psychological components that are associated with its use.

Statement of Purpose

The purpose of this study was to examine the relationship of total Internet usage and Internet category to personality structure, social desirability, and sensation seeking. In particular, the study examined the relationship of personality traits from several personality tests and various Internet usage categories that individuals report using. The present study furthers knowledge on a topic that has not been investigated and provides a baseline for further research in the area of Internet usage and personality structure.

Hypotheses

The main hypothesis for this study was that there was an expected relationship between Internet usage, Sensation Seeking, Social Desirability, and personality as defined by Costa and McCrae (1992) and Gough (1987). In particular, there were several specific hypotheses based on the limited research that has been completed on the topic. The Extroversion domain of the NEO-FFI was expected to correlate positively with the Communication, Entertainment, and Social-Networking Internet categories of the Internet Usage Questionnaire. The Neuroticism domain of the NEO-FFI was expected to correlate positively with the Dating category of the Internet Usage Questionnaire. Individuals who scored higher on the Marlowe Crowne Social Desirability Scale were expected to report lower number of hours on the Dating and Social-Networking Internet categories and

higher numbers on the Education and Work Business Internet Categories. Individuals who scored higher on the Sensation Seeking Scale were expected to report higher use of the Entertainment Internet category whereas lower scorers on the Sensation Seeking Scale were expected to report lower use of the Dating and Social-Networking Internet categories. The Capacity for Status (Cs), Sociability (Sy), and Self-Acceptance (Sa), scales of the CPI were expected to correlate negatively with the Dating, Social-Networking, Entertainment, and Communication categories of the Internet. The Self-control (Sc) scale of the CPI was expected to correlate positively with the Education, Personal Business, Personal Research, and the Work/Business categories of the Internet Usage Questionnaire.

Chapter 7

METHOD

Participants

Participants consisted of 283 (218 females, 62 males, 3 unknown) undergraduate and graduate psychology students in lower-division psychology courses. The ages of the students ranged from 17 to 66 years with a mean age of 22.15 and a standard deviation of 6.73 (Table 1). The research setting for the study was the campus of California State University, Sacramento. Participants received credit toward satisfying the Psychology Department's research participation requirement by participating in this study.

Measures

California Psychological Inventory (CPI). Four scales from California Psychological Inventory (CPI) were used to assess different aspects of personality in the study (Gough, 1987). The four scales derived from the CPI are called Capacity for Status Scale (Cs), Self-Acceptance Scale (Sa), Sociability Scale (Sy), and Self-Control Scale (Sc). The items were ordered chronologically and listed in the same order as they would be in the full CPI inventory. This test is a 106-item questionnaire that assesses the personality of individuals in a normal population. The test can be administered individually or in groups. The test was designed for use with young adults (at least a fourth grade reading level), but it has been used with subject aged 12 through 70 (Gough, 1987). The items assess the individual in terms of his or her behavior patterns, feelings, opinions, and attitudes under certain circumstances (social, ethical, family matters).

Gough (2002) listed and described these scales as “folk scales.” Thus, the scales used reflect certain personality characteristics.

Test-retest reliability coefficients for the individual scales have ranged from .51 to .84, with an overall median reliability of .68 (Gough, 1987). Some scales thus have good reliability while others do not. The scales that have lower reliabilities are Capacity for Status (Cs), and Self-Acceptance (Sa). The rest of the scales have reliabilities of .68 or higher. Internal consistency reliability analysis was conducted and yielded coefficients ranging from .43 to .85 with an overall median reliability of .76 (Gough, 1987). For the scale, higher scores on a scale indicate personal adjustment whereas lower scores indicate psychopathology (Burger, Pickett, & Goldman, 1977). Studies have been completed on the CPI resulting in two, four, and five factor solutions (Burger, Pickett, & Goldman, 1977). Additionally, a study has also examined content validity between the CPI and the Big Five personality factors (extroversion, neuroticism, conscientiousness, agreeableness, and openness) to confirm that the CPI correlates well with the five domains of the NEO PI-R (Burger, Pickett, & Goldman, 1977).

Internet Usage Questionnaire (IUQ). The Internet Usage Questionnaire (Appendix B) is a ten-item self-report questionnaire that measures the amount of time an individual reported spending on the various categories of Internet use. Nine of the items on the questionnaire are based on the researcher’s design, and theoretical components. For each item, the respondent indicates the number of hours dedicated to the specific Internet category per week. The last item of the questionnaire is open-ended. The individual completing the survey is requested to specify other Internet categories that

were not listed previously and the number of hours per week dedicated to these other categories. Therefore, there are ten Internet categories: Communication, Dating, Education, Entertainment, Personal Business, Personal Research, Shopping, Social Networking, Work/Business, Other.

Marlowe Crowne Social Desirability Scale (MCSDS). The *Marlowe Crowne Social Desirability Scale (MCSDS)* is a 33-item true/false questionnaire that measures the social desirability of individuals embodied in their self-reported scales (Crowne & Marlowe, 1960). The scale asks two types of questions in regard to social desirability. There are questions that ask about behaviors that are uncommon but can be described as desirable. An example of this would be admitting a mistake (Crowne & Marlowe, 1960). Conversely, there are other questions that describe common behavior that is not regarded as desirable, such as gossiping (Crowne & Marlowe, 1960). The MCSDS was designed for administration to non-pathological individuals. Higher scores indicate a need for approval (Crowne & Marlowe, 1960). The internal consistency of the MCSDS has ranged from .73 to .88 (Crowne & Marlowe, 1964). In addition, Crowne and Marlowe (1964) completed a one month test-retest analysis of the scale with a result of .88. Convergent validity has been investigated with the MCSDS in which this scale is correlated with a need for approval (Crowne & Marlowe, 1964). Based on previous studies, it has been shown that individuals who score high on the scale (as compared to low scores) will respond more to social reinforcement, will inhibit aggression, and are more likely to be influenced by society (Crowne, & Marlowe, 1964).

NEO Five-Factor Inventory (NEO-FFI). The *NEO Five-Factor Inventory (NEO-FFI)* is a 60-item questionnaire that measures the Big Five personality factors derived from factor analyses based on a lexical reflection of personality descriptors (Costa & McCrae, 1992). Based on the factor analysis, the test developer found five domains which were extroversion, neuroticism, conscientiousness, agreeableness, and openness (Costa & McCrae, 1980). The NEO-FFI has five domains (extroversion, neuroticism, conscientiousness, agreeableness, and openness). Each domain has six facets (Costa & McCrae, 1992).

Reliability analyses conducted on the NEO-FFI for Form S and for Form R have shown high alpha levels for this personality test. Alpha levels for each domain for Form S and Form R ranged from .86 to .92 and .89 to .95 respectively. The alpha levels for each facet of Form S ranged from .56 to .81 (Costa & McCrae, 1992). The facets with low alpha levels are Tender-Mindedness, Compliance, Actions, and Activities; the remaining facets have an alpha level of .65 or higher (Costa & McCrae, 1992). The analyses for Form R have yielded higher reliability levels of .69 to .90 (Costa & McCrae, 1992). The facets with low alpha levels are Tender-Mindedness, Compliance, Actions, and Activities; the remaining facets have an alpha level of .70 or higher (Costa & McCrae, 1992). Construct validity of the NEO-FFI was assessed by comparing this test to the Myers-Briggs Type Indicator (MBTI), which has been associated to Jungian psychological types. Strong correlations have been found between many of the facets of the NEO-FFI and the MBTI (Costa & McCrae, 1992). Based on comparisons between the NEO-FFI and the MBTI, the Openness domain of the NEO-FFI was positively correlated

($r = .72, p = .001$) with the MBTI indicator of Intuition (Costa & McCrae, 1992). In addition, the Agreeableness domain of the NEO-FFI was positively correlated ($r = .44, p = .001$) with the Feeling indicator of the MBTI (Costa & McCrae, 1992). Lastly, the Conscientiousness domain of the NEO-FFI was positively correlated ($r = .49, p = .001$) with the Judging indicator of the MBTI (Costa & McCrae, 1992).

Sensation Seeking Scale (SSS). The Sensation Seeking Scale (SSS) is a 40-item questionnaire that measures levels of thrill seeking through one's personality (Zuckerman, Kolin, Proce, & Zoob, 1964). The SSS has four primary scales (Disinhibition, Boredom Susceptibility, Thrill and Adventure Seeking, Experience Seeking) and a total score. The reliability of the Thrill and Adventure Seeking subscale has ranged from .72 to .90 (Zuckerman, 1978). The reliability of the Disinhibition subscale ranged from .60 to .79 (Zuckerman, 1978). The reliability of the Boredom Susceptibility subscale has not yielded high coefficients; the reliability has ranged from .30 to .70 (Zuckerman, 1978). The reliability of the Experience Seeking subscale has yielded low to moderate coefficients that have ranged from .51 to .75 (Zuckerman, 1978). For the total score of the SSS, the reliability has ranged from .84 to .86 (Zuckerman, 1978). Internal reliability of the total score ranges from .83 to .86 (Zuckerman, 1979). Following a three week interval, test-retest reliability for the total score was .94 (Zuckerman, 1979).

Procedure

Participants were recruited through the Psychology Department of California State University, Sacramento. Lower division psychology students were required to fulfill

a set number of research hours in exchange for course credit. Participants were asked to sign-up at the Psychology Department's website. At the beginning of the session, consent forms were distributed, signed, returned, and then placed in a separate envelope to ensure that they could not be traced to the research materials of particular participants.

Following that, the participants completed the demographics questionnaire and the Internet Usage Questionnaire (IUQ). Once these were completed, the researcher administered the remaining scales: California Psychological Inventory (CPI), Marlowe Crowne Social Desirability Scale (MCSDS), the revised NEO Five-Factor Inventory (NEO-FFI), the Sensation Seeking Scale (SSS). The above listed inventories were presented in a different random order for each participant. Participants were instructed to not place their name or any other identifying marks on the materials.

After participants completed filling out the inventories, the packets were collected and placed together in a different envelope from the one containing the consent forms. This was done to ensure that the packets will not be able to be linked to specific participants. The researcher then orally debriefed the participants, answered any questions they had at that time, and handed out the debriefing page for the participants to keep. Everyone was then thanked for their participation and dismissed.

Chapter 8

RESULTS

The results of this study are organized in the following manner. The first section reports preliminary findings with demographic variables and main study variables (Internet usage, personality, social desirability, and sensation seeking behavior). The latter portion of this section presents the results of the specific research hypotheses in regard to demographic variables, Internet usage, social desirability, and sensation seeking behavior in relation to personality traits and characteristics using bivariate correlation analysis and multiple regression analysis. Lastly, new findings are presented.

Preliminary Analyses

Participants consisted of 283 (218 females, 62 males, 3 unknown) undergraduate and graduate psychology students in lower-division psychology courses. The ages of the students ranged from 17 to 66 years with a mean age of 22.15 and a standard deviation of 6.73 (Table 1).

Descriptive statistics were used to determine the average amount of time an individual would normally spend on the Internet in a given week. Every individual in this study reported dedicating some time to the Internet. Whether due to availability or lack of interest, the range of hours spent on the Internet among individuals is dramatic. Many individuals reported spending over 100 hours of time on the Internet per week whereas others only report being on the Internet for a few hours.

Table 1

Characteristics of Sample by Gender

Demographic Variable	Male		Female		Total	
	N	%	N	%	N	%
Ethnicity						
American Indian	0	(0.00)	2	(.70)	2	(.70)
Asian American	12	(4.27)	41	(14.59)	53	(18.86)
African American	3	(1.07)	14	(4.98)	17	(6.05)
Hispanic, Latino	9	(3.20)	21	(7.47)	30	(10.68)
Middle Eastern	3	(1.07)	4	(1.42)	7	(2.49)
Caucasian	25	(8.90)	107	(38.08)	132	(46.98)
Multi-Ethnic	7	(2.49)	20	(7.12)	27	(9.61)
Other*	3	(1.07)	9	(3.20)	12	(4.27)
Class Level						
Freshman	15	(5.36)	46	(16.43)	61	(27.79)
Sophomore	19	(6.79)	63	(22.50)	82	(29.29)
Junior	10	(3.57)	58	(20.71)	68	(24.29)
Senior	18	(6.43)	47	(16.79)	65	(23.21)
Graduate Student	0	(0.00)	3	(1.07)	3	(1.07)

Note. *Other ethnicities were written by participants and included the following: Afghan, Asian, Chinese/Dutch, Don't Accept an Ethnicity (2), East Indian, Hmong (3), and Slavic.

On average, individuals in this study reported spending 42.25 hours a week in total on the Internet. However, the amount of time per week reported for each Internet category fluctuated. The majority of time spent on the Internet was dedicated to communication, education, entertainment and social networking (Table 2). In addition, the majority of the individuals who took the survey reported spending at least some of their time on every Internet category except one. Only five of 283 reported using the Internet for dating or romantic relationships.

Table 2

Hours of Internet Usage by Category per Week (N = 283)

Internet Category	Mean	Median	Mode	Standard Deviation	Minimum	Maximum
Communication	7.50	4.00	2.00	10.71	0.00	84.00
Dating	.09	0.00	0.00	.96	0.00	15.00
Education	9.43	6.00	3.00	8.56	1.00	60.00
Entertainment	6.40	4.00	2.00	9.19	0.00	100.00
Personal (Bus.)	1.65	1.00	1.00	2.19	0.00	20.00
Personal (Res.)	4.50	3.00	1.00	7.87	0.00	100.00
Shopping	2.02	1.00	0.00	4.60	0.00	60.00
Social Network	8.49	5.00	0.00	11.45	0.00	80.00
Work	1.49	0.00	0.00	4.18	0.00	25.00
Other* (N = 41)	4.76	3.00	1.00	5.65	0.00	28.00
Total	42.25	30.00	21.00	38.98	6.00	350.00

Note. *Other Internet categories were written by participants and included the following: Craft Websites, Gaming, Music, News, Pornography, Religious, Travel, Volunteer Work, Web Design, and Weight Loss/Fitness.

Pearson correlation coefficients were calculated to determine relationships between each Internet usage category: Communication, Dating, Education, Entertainment, Personal Business, Personal Research, Shopping, Social Networking, Work/Business, Other. The results indicated moderate correlations between Communication, Education, and Entertainment and the rest of the categories (Table 3).

Table 3

Bivariate Correlations between Categories of Internet Use

Variable	1	2	3	4	5	6	7	8	9	10
1.Communication	1.0									
2. Dating	.11	1.0								
3. Education	.46*	-.16	1.0							
4. Entertainment	.26*	-.16	.37*	1.0						
5. Personal (Bus.)	.23	-.06	.46*	.21	1.0					
6. Personal (Res.)	.34*	-.04	.62*	.41*	.59*	1.0				
7. Shopping	.30*	.03	.39*	.32*	.09	.52*	1.0			
8. Social Net.	.40*	-.04	.42*	.39*	.23	.27*	.28*	1.0		
9. Work	.15	-.03	.18	.02	.24	.02	.03	.14	1.0	
10. Other	.63*	.00	.44*	.04	.10	.68*	.42*	.23	.05	1.0

Note. * $p < .01$.

Hypotheses

In the first hypothesis, it was expected that there would be a relationship between Internet usage, Sensation Seeking, Social Desirability, and personality as defined by Costa and McCrae (1992) and Gough (1987). In the second hypothesis, it was anticipated that the Extroversion domain of the NEO-FFI would correlate positively with the Communication, Entertainment, and Social-Networking Internet categories of the Internet

Usage Questionnaire. Also, the Neuroticism domain of the NEO-FFI was expected to correlate positively with the Dating category of the Internet Usage Questionnaire. For our third hypothesis, it was believed that individuals who scored higher on the Marlowe Crowne Social Desirability Scale would report lower number of hours on the Dating and Social-Networking Internet categories and higher numbers on the Education and Work Business Internet Categories. Next, it was anticipated that individuals who scored higher on the Sensation Seeking Scale would report higher use of the Entertainment Internet category whereas lower scorers on the Sensation Seeking Scale were expected to report lower use of the Dating and Social-Networking Internet categories. Lastly, it was expected that the Capacity for Status (Cs), Sociability (Sy), and Self-Acceptance (Sa) scales of the CPI would correlate negatively with the Dating, Social-Networking, Entertainment, and Communication categories of the Internet. The Self-control (Sc) scale of the CPI was expected to correlate positively with the Education, Personal Business, Personal Research, and the Work/Business categories of the Internet Usage Questionnaire.

Bivariate correlation analysis was conducted based on all hypotheses as stated. Of the hypotheses stated, only one was confirmed. Results indicated that Social Networking correlated negatively with Experience Seeking as well as with Total Sensation Seeking (Experience Seeking $r = -.21, p < .001$; Total Sensation Seeking, $r = -.20, p < .001$). Many variables did approach statistical significance. However, the degrees of association for the analyses were very modest. In addition, standard linear regression analyses were

employed to assess the degree to which Internet categories predicted personality structure. In particular, four standard regression analyses were conducted with each CPI subscale as the dependent variable and all Internet categories as the predictors. Also, five standard regression analyses were conducted with each NEO-FFI domain as the dependent variable and all Internet categories as the predictors. Next, five standard regression analyses were conducted with sensation seeking (four sensation seeking subscales and total sensation seeking) as the dependent variable and all Internet categories as the predictors. Lastly, a standard regression analysis was conducted with social desirability as the dependent variable and all Internet categories as the predictors. Even though many variables came close to significance, none of the analyses actually yielded significant results.

New Findings

Additional analyses were conducted to examine relationships that were not specifically stated in the hypotheses which yielded significant results. Stepwise multiple regression analysis was conducted to find the best regression model for predicting sensation seeking with demographic variables and each Internet usage category: Communication, Dating, Education, Entertainment, Personal Business, Personal Research, Shopping, Social Networking, Work/Business, and Other. With the Thrill and Adventure subscale as the dependent variable, the regression model was significant, $F(5, 274) = 3.75, p < .01$. The results showed that Age, Social Networking, and Ethnicity significantly predicted Thrill and Adventure Seeking, $R^2 = .06$, adjusted $R^2 = .05$. Age was

the strongest negative predictor with Social Networking being the last negative predictor. Ethnicity was the only positive predictor (Table 4).

Table 4

Results of Standard Linear Multiple Regression Predicting Thrill and Adventure Seeking

Variables	<i>B</i>	<i>SE B</i>	β	<i>p</i>	ΔR^2	<i>Total R²</i>
$R^2 = .06, F(5, 274) = 3.75, p < .01$.06	.06
Age**	-.08	.02	-.19	.00		
Social Networking*	-.04	.02	-.17	.01		
Shopping	.03	.04	.05	.44		
Ethnicity*	.18	.09	.12	.04		
Communication	.01	.02	.02	.72		

* $p < .05$, ** $p < .01$.

In summary, the findings were mixed, given that the Internet usage variables did not clearly predict personality for all respondents as previously stated. The results did show that variables such as Age, Social Networking, and Ethnicity predicted the thrill and adventure seeking subscale of sensation seeking. However, significant results were only obtained when demographic variables were added to the analyses.

Chapter 9

DISCUSSION

This study set out to explore the relationship between Internet usage and personality structure as defined by several sources (Costa & McCrae, 1992; Crowne & Marlowe, 1960; Gough, 1987; & Zuckerman, 1978). The literature on Internet usage demonstrates its importance as a psychological resource because Internet usage has been linked with Big Five Personality traits (Landers & Lounsbury, 2006; Hamburger & Ben-Artzi, 2000). However, much of the literature has focused on only one personality theory; there has not been extensive research with other theories.

Preliminary Analyses

Based on the current literature, individuals over the age of 12 spend at least 11 hours or more per month on the Internet (Nielsen Company, 2009). However, some age groups use the Internet more than others. The Nielsen Company (2009) conducted research for an age group that is similar to that of the present study. In fact, the Nielsen Company (2009) stated that individuals between the ages of 25 and 34 dedicate over 25 hours per month to using the Internet. The data from the present study showed that individuals may spend more time on the Internet than was originally thought. Not surprisingly, individuals reported spending the bulk of their Internet usage on communication, education, entertainment, and social networking. This may be due to the fact that many of those services can only be administered online. In fact, communication, education, entertainment, and social networking were also the variables that correlated

(albeit moderately) with the other categories. However, due to lack of significant results, all results must be interpreted with caution and may not be taken at face value.

Hypotheses

Drawing on these bodies of work, the hypotheses were tested to add to growing knowledge of Internet usage. In the first hypothesis, it was expected that there would be a relationship between Internet usage, Sensation Seeking, Social Desirability, and personality as defined by Costa and McCrae (1992) and Gough (1987).

In the second hypothesis, it was anticipated that the Extroversion domain of the NEO-FFI would correlate positively with the Communication, Entertainment, and Social-Networking Internet categories of the Internet Usage Questionnaire. Also, the Neuroticism domain of the NEO-FFI was expected to correlate positively with the Dating category of the Internet Usage Questionnaire.

For the third hypothesis, it was believed that Individuals who scored higher on the Marlowe Crowne Social Desirability Scale would report lower number of hours on the Dating and Social-Networking Internet categories and higher numbers on the Education and Work Business Internet Categories. Next, it was anticipated that individuals who scored higher on the Sensation Seeking Scale would report higher use of the Entertainment Internet category whereas lower scorers on the Sensation Seeking Scale were expected to report lower use of the Dating and Social-Networking Internet categories.

Lastly, it was expected that the Capacity for Status (Cs), Sociability (Sy), and Self-Acceptance (Sa) scales of the CPI would correlate negatively with the Dating, Social-Networking, Entertainment, and Communication categories of the Internet. The Self-control (Sc) scale of the CPI was expected to correlate positively with the Education, Personal Business, Personal Research, and the Work/Business categories of the Internet Usage Questionnaire.

Unfortunately, the majority of the hypotheses were not significant. The only variable that related well to personality structure was Social Networking. Social Networking was found to correlate negatively with sensation seeking. This could be due to the type of individual who would score high on sensation seeking. These individuals search for events or situations that require excitement and/or adventure. Posting what you are doing on a social network site might seem mundane or banal to those who would rather be out searching for such excitement. More research needs to be conducted to investigate this possible growing trend of social networking.

New Findings

Even though the majority of hypotheses were not significant, there were several additional variables used that did yield significant results. In particular, sensation seeking was found to be a significant predictor. Standard linear regression analysis was conducted to find significant predictors of sensation seeking with each Internet category and demographic variables. Based on the analyses, the Thrill and Adventure subscale included three significant predictors (Age, Social Networking, and Ethnicity).

In addition, Age, and Social Networking were strong negative predictors for Thrill and Adventure Seeking. This occurrence may be due to the type of person who would score high on the sensation seeking scale. Individuals who would score high on this scale are people who thrive in dangerous or exciting environments. With regard to social networking and shopping on the Internet, their needs may not be met by merely sitting at home in front of a computer. These individuals need to get their thrill from other sources. Also, it makes sense that age resulted in negative beta coefficients. Individuals who are younger may be more inclined to take risks while they still have their youth.

Limitations & Implications of this Research

Given the lack of clarity in the findings, the results should be viewed with caution. One possible limitation is that students' responses were based on self-report. While this is an issue that affects all populations, Internet usage is a variable that is fluid and can change from week to week. Additionally, Internet categories can be hard to capture in an objective report because participants may inflate or reduce the amount of time dedicated to Internet exposure. There may also be some overlap between the different Internet categories. An application that can be used in one Internet category may be used in another, which may be confusing to the participant. For example, social networking websites such as Facebook.com and Myspace.com offer a messaging application which acts like an email. Some participants may perceive this as part of social networking whereas others may perceive this as communication.

An issue related to this involves the Internet usage measure employed in this study. Although it described each category in detail, there was still some confusion with the reporting. For example, a participant added another Internet category which was called “television.” The measure would describe that as entertainment but the participant thought it was its own category. Lastly, many individuals in this study appeared to greatly inflate their responses in regard to how many hours they spent on the Internet. For example, one individual reported spending 350 hours on the Internet. There are only 168 hours in a week. Based on what individuals wrote in their self-reported surveys, these data should not be taken at face value. Therefore, it would be helpful for future research to include a more detailed Internet categories questionnaire that may capture the amount of time accurately and without confusion from the participants.

Furthermore, accurate reported use of some Internet categories can be difficult to obtain due to social desirability. Some of the reports from Internet categories such as entertainment, social networking, and education could be inflated or decreased due to what may be social acceptability. It may be expected that one would spend a great deal of time on education aspects of the Internet, but participants may be reporting hours that reflected what they believe society would find acceptable. Some individuals may think that spending the majority of time on social networking sites is abnormal, so they would report what would be socially acceptable. Similarly, only five individuals reported using the Internet specifically for dating or romantic relationships, even though millions of people use it daily for this purpose. Is this a true representation of Internet usage in the “real world?”

Another limitation concerns Internet availability to the participants. This sample consisted primarily of lower division psychology students at a state university, which limits the generalizability of the information. Ideally, the participants for this study would have included a diverse range of individuals. However, the majority of the participants were students in their early twenties. Modern college campuses now have the Internet, whether through a physical school network or Wi-Fi, so that any student enrolled on campus can easily be connected to the Internet. This is not the case for individuals who are not going to school and do not have Internet access readily available. Future research should include a more diverse array of individuals with assorted opportunities for Internet availability to allow for comparisons between groups.

This study provides insight into the growing trend of Internet consumption. Specifically, demographic variables and personality variables were examined with regard to Internet usage. Although findings only partially supported the hypotheses, this study did demonstrate the dependence on newer technologies in modern society by showing that a large portion of our lives are dedicated to the Internet. Time is the only factor that will determine how this adaptation to newer technologies will affect our lives in the future.

APPENDIX A

Demographics Page

Gender:

☐ Male☐ Female

Ethnicity:

☐ American Indian☐ Asian American or Pacific Islander☐ African American or Black American☐ Hispanic, Latino, or Spanish☐ Middle Eastern☐ White, Caucasian☐ Multi-Ethnic☐ Other (Please Explain: _____)

What is your class level? (Circle One)

Freshman

Sophomore

Junior

Senior

Graduate
Student

What is your GPA? _____

What is your age? _____

If you are employed, how many hours do you work in a week? _____

Not Employed (Please Check): _____

APPENDIX B

Internet Usage Questionnaire

For each of the following categories of Internet use, please indicate the number of hours you spend on this category in an average week. Please use **whole** numbers (no decimals or fractions). If you do not spend any amount of time on a particular category, please indicate that with a zero.

Communication:

These types of websites are used for the purpose of communicating with other people via **email**, **instant messaging**, and/or **chat rooms**. As with the use of a phone, this category is used as a way to communicate between individuals.

Examples of sites that have communication applications are AOL, Yahoo, Gmail, and Hotmail.

Number of hours spent during an average week: _____

Dating:

These types of websites are used for people who use the Internet as a tool to find **romantic relationships** with other people. These types of websites can range from personal advertisements to online dating sites that match people based on specific qualities.

Examples of these types of sites are eHarmony.com, Match.com, Chemistry.com, and Craigslist.org

Number of hours spent during an average week: _____

Education:

These types of websites are used for the purpose of learning. Academic sites are used so the individual can research, read, and study for classes being taken at universities and colleges. Activities can include homework, academic papers, quizzes, and tests.

Examples of these sites are individual home pages of colleges and universities, libraries, article database searching sites, and online classes.

Examples of these types of sites are Blackboard, SacCT, EBSCO, PsycInfo, college and university websites, and library websites.

Number of hours spent during an average week: _____

Entertainment:

These types of websites are used for the purpose of entertainment, interest, and enjoyment. Entertainment websites are designed to give people pleasure and/or relaxation. In addition, the audience may participate in the activity passively as in watching video or reading an article, or actively as in playing a game.

Examples of these sites are YouTube.com, Poker.com, YahooMusic.com, and EW.com (Entertainment Weekly Online).

Number of hours spent during an average week: _____

Personal Business:

These types of websites are used for people who use the Internet for personal finances. Individuals use these types of websites for their personal banking, and paying bills (including rent).

An example of these types of sites is Bank of America Online Banking, and Wells Fargo Online Banking.

Number of hours spent during an average week: _____

Personal Research:

These types of websites are used for people who use the Internet as a tool to seek information about anything important to the individual.

Examples of these types of sites are Google.com, Wikipedia.org, Ask.com, and CNN.com.

Number of hours spent during an average week: _____

Shopping:

These types of websites are used for people who use the Internet to shop for personal items. Individuals use these types of websites to shop for their clothes, electronics, food, etc. This category includes the buying and selling of goods online or through auction houses.

Examples of these types of sites are eBay, PayPal, Amazon.com, Craigslist.org, and Overstock.com.

Number of hours spent during an average week: _____

Social Networking:

These types of websites are used for the purpose of connecting with other individuals for the purpose of **friendships and/or acquaintances**. On these websites, people create and decorate their own profiles for other people to observe. In addition, people who subscribe to these websites can write to each other via comments and messages, upload pictures to their individual profile, and in some cases associate music to their profiles.

Examples of these types of sites are Twitter, MySpace, Friendster, MocoSpace and Facebook.

Number of hours spent during an average week: _____

Work/Business:

These types of websites are used for communication with other people via email for work purposes only. As with the use of a phone, this category is used as another way to communicate between individuals. The Internet can also be used to design and maintain a website for a business. This category can also include research you might complete as a part of your job. Lastly, websites in this category can be used to try to find a job.

Examples of these types of sites are Monster.com, Careerbuilder.com, Craigslist.org, Ladder.com, and LinkedIn.com.

Number of hours spent during an average week: _____

Other:

Please write any other Internet categories that you use that were not listed previously.

1.) _____

Number of hours spent during an average week: _____

2.) _____

Number of hours spent during an average week: _____

3.) _____

Number of hours spent during an average week: _____

4.) _____

Number of hours spent during an average week: _____

REFERENCES

- Aluja, F. A. (2000). Personality and curiosity about TV and films violence in adolescents. *Personality and Individual Differences, 29*, 379–392.
- Aluja, F. A., & Torrubia, B. R. (1998). Viewing of mass media violence, perception of violence, personality and academic achievement. *Personality and Individual Differences, 25*, 973–989.
- American Psychological Association. (1993). Violence and youth: Psychology's response. Washington, DC: American Psychological Association.
- Amichai-Hamburger, Y., & Ben-Artzi, E. (2003). Loneliness and Internet use. *Computers in Human Behavior, 19*, 71–80.
- Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological Science, 12*, 353–359.
- Armstrong, L., Phillips, J. G., & Saling, L. L. (2000). Potential determinants of heavier internet usage. *International Journal of Human-Computer Studies, 53*(4), 537–550.
- Brown, J. D., Steele, J. R., Walsh-Childers, K. (2002). Sexual teens, sexual media: Investigating media's influence on adolescent sexuality. Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Buffardi, L. E., & Campbell, K. (2008). Narcissism and social networking web sites. *Personality and Social Psychology Bulletin, 34*, 1303-1314.

- Burger, G. K., Pickett, L., & Goldman, M. (1977). Second order factors in the California Psychological Inventory. *Journal of Personality Assessment*, 41, 58-62.
- Chua, S. L., Chen, D., & Wong, A. F. L. (1999). Computer anxiety and its correlates: A meta-analysis. *Computers in Human Behavior*, 15, 609–623.
- Costa, P. T., Jr., & McCrae, R. R. (1980). Influence of extraversion and neuroticism on subjective well-being: Happy and unhappy individuals. *Journal of Personality and Social Psychology*, 38, 668–678.
- Costa, P. T., Jr., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.
- Crowne, D.P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, 24, 349-354.
- Crowne, D. P. & Marlowe, D. (1964). *The Approval Motive*. New York: John Wiley & Sons.
- Eysenck, S.B. & Eysenck, H.J. (1964). An improved short questionnaire for the measurement of extraversion and neuroticism. *Life Sciences*, 305, 1103–1109.
- Gough, H. G. (1957). *Manual for the California Psychological Inventory™*. Mountain View, CA: CPP, Inc.
- Gough, H. G. (1987). *The California Psychological Inventory™ administrator's guide*. Mountain View, CA: CPP, Inc.
- Gough, H. G., (2002). *CPI™ bibliography*. Mountain View, CA: CPP, Inc.

- Gough, H. G. (2002). *Technical Brief for the CPI 260™ Instrument*. Mountain View, CA: CPP, Inc.
- Gough, H. G., & Bradley, P. (1996). *CPI™ manual* (3rd ed.). Mountain View, CA: CPP, Inc.
- Gross, E. F. (2004). Adolescent Internet use: What we expect, what teens report. *Applied Developmental Psychology, 25*, 633–649.
- Gunter, B., & Furnham, A. (1986). Sex and personality differences in recall of violent and non-violent news from three presentation modalities. *Personality and Individual Differences, 7*, 829–837.
- Hamburger, Y. A., & Ben-Artzi, E. (2000). The relationship between extraversion and neuroticism and the different uses of the internet. *Computers in Human Behavior, 16*, 441–449.
- Joinson, A. N. (2001). Self-disclosure in computer-mediated communication: The role of self-awareness and visual anonymity. *European Journal of Social Psychology, 31*, 177–192.
- Kiesler, S., Siegal, J., & McGuire, T. W. (1984). Social psychological aspects of computer-mediated communication. *American Psychologist, 39*, 1123–1134.
- Kraut, R., Kiesler, S., Boneva, B., Cummings, J., Helgeson, V., & Crawford, A. (2002). Internet paradox revisited. *Journal of Social Issues, 58*, 49–74.
- Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T., & Scherlis, W. (1998). Internet paradox: A social technology that reduces social involvement and psychological well-being? *American Psychologist, 53*, 1017–1031.

- Landers, R. N., Lounsbury, J. W. (2006). An investigation of Big Five and narrow personality traits in relation to Internet usage. *Computers in Human Behavior*, 22, 283-293.
- Lanthier, R. P., & Windham, R. G. (2004). Internet use and college adjustment: The moderating role of gender. *Computers in Human Behavior*, 20, 591–606.
- Liaw, S. S. (2007). Computers and the internet as a job assisted tool: Based on the three-tier use model approach. *Computers in Human Behavior*, 23, 399-414.
- Mastronardi, M. (2003). Adolescence and media. *Journal of Language and Social Psychology*, 22, 83-93.
- McIlwraith, R. D. (1998). “I’m addicted to television”: The personality, imagination, and TV watching patterns of self-identified TV addicts. *Journal of Broadcasting and Electronic Media*, 42(3), 371–386.
- Moody, E. J. (2001). Internet use and its relationship to loneliness. *Cyber-Psychology & Behavior*, 4, 393–401.
- Nichols, L. M. (1992). The influence of student computer-ownership and in-home use on achievement in an elementary school computer programming curriculum. *Journal of Educational Computing Research*, 4, 407– 0421.
- Nielsen Company. (2009). *Television, internet, and mobile usage in the U.S.: A2/M2 three screen report* (4th quarter 2008). New York, NY: Author.

- Niemz, K., Griffiths, M., & Banyard, B. (2005). Prevalence of pathological internet use among university students and correlations with self-esteem, the general health questionnaire (GHQ), and disinhibition. *CyberPsychology & Behavior*, 8, 562-570.
- Parker, J. D. A., Taylor, R. N., Eastabrook, J. M., Schell, S. L. & Wood, L. M. (2008). Problem gambling in adolescence: Relationships with internet misuse, gaming abuse and emotional intelligence. *Personality and Individual Differences*, 45, 174-180.
- Persegani, C., Pierluigi, R., Carucci, C., Nicolini, M., Papeschi, C. C., & Trimarchi, M. (2002). Television viewing and personality structure in children. *Personality and Individual Differences*, 32, 977-990.
- Potts, R., Runyan, D., Zerger, A., & Marchetti, K. (1996). A content analysis of safety behaviors of television characters: Implications for children's safety and injury. *Journal of Pediatric Psychology*, 21, 517-528.
- Scull, C. A. (1999). Computer anxiety at a graduate computer center: Computer factors, support, and situational pressures. *Computers in Human Behavior*, 15, 213-226.
- Sege, R., & Dietz, W. (1994). Television viewing and violence in children: the pediatrician as agent for change. *Pediatrics*, 94(4), 600-607.
- Singer, M. I., Slovak, K., Frierson, T., & York, P. (1998). Viewing preferences, symptoms of psychological trauma, and violent behaviors among children who watch television. *Journal of American Academy of Child and Adolescent Psychiatry*, 37, 1041-1048.

- Subrahmanyam, K., & Greenfield, P. (1994). Effect of video game practice on spatial skills in girls and boys: Special Issue: Effects of interactive entertainment technologies on development. *Journal of Applied Developmental Psychology, 15*, 13–32.
- Subrahmanyam, K., Kraut, R., Greenfield, P., & Gross, E.F. (2000). The impact of home computer use on children's activities and development. *The Future of Children, 10*, 123–144.
- Ting, Y., & Grant, R. (2005). Internet usage of local government employees: A study of the effect of individual preferences, group influences, and administrative factors. *The Social Sciences Journal, 42*, 323–331.
- Turow, J. (1999). *The Internet and the family: The view from the parents, the view from the press*. Philadelphia: Annenberg Public Policy Centre.
- Wheeler, J. L., & Regian, J. W. (1999). The use of a cognitive tutoring system in the improvement of the abstract reasoning component of word problem solving. *Computer in Human Behavior, 15*, 243–254.
- Willoughby, T. (2008). A short-term longitudinal study of internet and computer game use by adolescent boys and girls: Prevalence, frequency of use, and psychosocial predictors. *Developmental Psychology, 44*, 195–204.
- Weaver, J. B. (1991). Exploring the links between personality and media preferences. *Personality and Individual Differences, 12*, 1293–1299.

- Wood, E., Mueller, J., Willoughby, T., Specht, J., & DeYoung, T. (2005). Teachers' perceptions: Barriers and supports to using technology in the classroom. *Education, Communication, & Information, 5*, 183–206.
- Wu, K. D., & Clark, L. A. (2003). Relations between personality traits and self-reports of daily behavior. *Journal of Research in Personality, 37*, 231–256.
- Ybarra, M. L., Alexander, M. P. H., & Mitchell, K. J. (2005). Depressive symptomatology, youth internet use, and online interactions: A national survey. *Journal of Adolescent Health, 36*, 9–18.
- Zillmann, D., & Weaver, J. B. (1997). Psychoticism in the effect of prolonged exposure to gratuitous media violence on the acceptance of violence as a preferred means of conflict resolution. *Personality and Individual Differences, 22*, 613–627.
- Zuckerman, M. (1978). Sensation seeking in England and America: Cross-cultural, age, and sex comparisons. *Journal of Consulting and Clinical Psychology, 46*, 139-49.
- Zuckerman, M. (1979). *Sensation seeking: Beyond the optimal level of arousal*. New Jersey: Lawrence Erlbaum Associates.
- Zuckerman, M., Kolin, E. A., Price, L., & Zoob, I. (1964). Development of a sensation-seeking scale. *Journal of Consulting Psychology, 28*, 477-482.
- Zuckerman, M., & Litle, P. (1986). Personality and curiosity about morbid and sexual events. *Personality and Individual Differences, 7*, 49–56.