

Investigating Korean College Students' Internet Use Patterns and Motivations, and Exploring Vulnerability of Internet Dependency

Jong-Gil Song

(Ph.D. Senior Researcher, Korean Broadcasting Institute)

Yong Jun Choi

(Ph.D. Candidate, School of Communication University of Southern Mississippi)

INTRODUCTION

The Internet has arguably become one of the most dominant communications media. Logging onto the Internet has become a daily activity for many people around the world(*USA Today*, 2000). Commerce Net(2000) reports the Internet population has grown from 26 million in 1995 to around 242 million in January, 2000. Nua Internet Surveys(2000) puts the worldwide Internet population at 360 million by July 2000.

These trends in Internet usage are noted by many social scientists(Abela, 1997; Butler, 1995; Cooper, Scherer, Boies, & Gordon, 1998; Hunter, 1996; Kiesler & Sproul, 1987; Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, & Scherlis, 1998; Perry, Perry, & Hosack-Curlin, 1998; Scherer, 1997; Stempel, Hargrove, & Bernt, 2000; Stoll, 1995; Turkle, 1995; Yoo, 1996). These studies reveal that the Internet is used as a social tool; to maintain social relationships, as a business

tool; to purchase or sell products and services, and as an academic, research tool. These studies, however, do not focus on the negative effects of Internet use. Some researchers see excessive Internet use as a significant social problem(Brenner, 1996; Greenfield, 1999a, 1999b, 2000; King, 1996; Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, & Scherlis, 1999; Murray, 1996; Potera, 1998; Suler, 1996; Thompson, 1996; Young, 1996, 1997a, 1997b). Researchers state that excessive Internet use could result in social impairment. They warn that anyone who has access to online communications could become addicted resulting in Internet dependence.

Korea has experienced remarkable growth over the last 7 years in its Internet population. Korean users, in 1994, numbered only 0.13 million(Ahn & Kim, 2000). Recent statistics from the Korean Ministry of Information and Communication(MIC) show that over 11.34 million Koreans, almost 25% of the country's population, were using the Internet at the end of January 2000(Creed, 2000). This number is expected to increase to about 34 million by 2003 (Global Research, 2000). This rapid expansion has caused some social problems. Even though Internet technology may seem to help people communicate more effectively, it can reflect antisocial behaviors such as excessive game playing and sexual addiction.

There are a few studies that analyze the negative effects of compulsive use of Internet, and most of the studies target teenager's Internet uses and vulnerability of Internet addiction. Ahn and Kim(2000) found a possibility of Internet addiction among Korean teenagers and co-relationship between seeking sexual materials and Internet addiction. Otherwise, the National Computerization Agency (NCA)'s statistics(2000) indicate that the majority of Internet users in Korea is college students and that when teenagers get into college their Internet usage motivations change. Thus, the comparison of

Internet uses and motivations between teenagers and college students is essential to understand how Internet usage varies according to circumstances.

The purpose of this study is to investigate how online activities can be addictive, what kinds of motivations relate to compulsive Internet use, and how addictive behaviors affect other communications.

LITURATURE REVIEW

Internet vs. Traditional Media

Internet technology has significantly affected the public's communication behaviors. The Internet has partly substituted traditional media for daily communications and leisure activities. The quantity of electronic mailing has already surpassed that of traditional mail services(Sklaroff, 1999). FIND/SVP's survey(1997) explains that traditional media has been displaced by the Internet just as other established media were displaced by the popularization of television in the 1960s.

Negroponete(1995) predicts that computer activities will substantially replace television viewing. Nielsen Media Research(1999) confirms that people with Internet access watch less TV. The Strategis Group's report(1998) shows that 64% of Internet users report a reduction in their television viewing or their VCR use. Stempel, et al,(2000) state that uses of traditional media such as local and network TV news, daily newspapers, and news magazines decline significantly as Internet use increases.

Motivations of Internet Uses

Social scientists indicate a high degree of interest in the growth of Internet use among the public. Many studies are trying to discover the reasons why people so quickly adopt this technology. Research is also examining the kinds of Internet service used and how it affects the daily lives of the users.

Social Contact and Information Seeking

Many studies focus on the Internet's basic use for social communication and information seeking. Butler(1995, Cited in Abela, 1997) and Yoo(1996, Cited in Abela, 1997) find that people mainly use the Internet to communicate with others or to find information. 90% of Butler's subjects report they use the Internet to communicate with other people or as a leisure activity. They frequently use E-mail services, newsgroups, and Inter-Related Chatting(IRC). According to the Yoo and Butler studies, E-mail is the most popular Internet service while web site services are common favorites for information gathering. Abela(1997) confirms that people use the Internet to keep in touch with friends, family, and the world since the Internet has the advantage of having no geographic boundaries. Abela further notes that users consider the Internet as a giant reference book that contains unlimited information.

Some studies concerning Internet use by college students report similar results. Perry, Perry and Hosack-Curlin(1998) propose that 80% of surveyed students use the Internet for E-mailing. Scherer(1997) suggests students mainly use the Internet for maintaining relationships and academic use. Other motivations include meeting new people and social experimentation as well as seeking

sexual, illegal, or immoral material.

Escapism and Avoiding Boredom

Abela(1997) reports that the Internet offers an escape from mundane, everyday life. Unlike the traditional media, the Internet provides unlimited contents for users to surf coupled with timeless accessibility. Greenfield(2000) proposes that the Internet has a powerful mood altering capability. In his study, 29% of the subjects report they regularly use the Internet to alter their mood or escape real life. He also suggests that people who use the Internet compulsively tend to engage in escapism because of unpleasant emotions associated with boredom. Dr. Orzack, the founder of Harvard's Computer Addiction Services, confirms this opinion by stating, the single greatest factor in becoming an addict is boredom, because when people are lonely, there is the Internet with its chat rooms and endless information to fill their needs(Cited in Gong, 1998).

Sexuality

Many people use the Internet for satisfying their sexual desires while they expose themselves to sexual materials such as adult stories, nude photos, and pornography. Through chat rooms or discussion groups people also talk about sex or exchange their sexual interests. According to Relevant Knowledge(1998), 9.6 million users, or about 15% of all web users, logged on to the 10 most popular sex sites in the month of April, 1998 alone(Cited in Young, 1998, p.1). The abundance and easy accessibility of such sexual materials online could result in compulsive patterns of Internet use for sexual gratification. Greenfield(1999b, 2000) suggests a high correlation between seeking sexuality on the net and excessive Internet uses. His

study finds that among people who considered themselves as Internet dependents, 62% regularly log on to pornography sites, and report that they sometimes experience sexual arousal while online (Greenfield, 2000). Also, this type of Internet addict is more likely to experience sexual gratification from online relationships(1999b). These findings show an interrelationship between online sexual behavior, sexual addiction, and Internet addiction.

Internet Addiction

Although the above studies identify various motivations for Internet usage, they do not focus on excessive Internet use, also known as Internet addiction or dependence. Recent studies consider excessive Internet use as a social phenomenon(Brenner, 1996; Greenfield, 1999a, 1999b, 2000; King, 1996; Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, & Scherlis, 1998; Murray, 1996; Potera, 1998; Suler, 1996; Thompson, 1996; Young, 1996, 1997a, 1997b). These studies define compulsive Internet use as a mental disorder even though there is no accepted set of criteria for testing Internet dependence in the *Diagnostic and Statistical Manual of Mental Disorders(DSM-IV)*. These studies estimate the number of Internet addicts from five to fifteen million. They suggest that Internet dependents could number as high as 6-10% of total Internet users(Greenfield, 1999a; Young 1996).

Internet Addiction Criteria

Internet addiction disorder is the term first proposed by Dr. Ivan Goldberg for pathological, compulsive Internet usage. Goldberg(1996) states that Pathological Computer Use Disorder causes distress and has a detrimental effect on physical, psycho-

logical, interpersonal, marital, economic, or social functioning(Cited in Suler, 1996, p. 2). Young(1996) reports that some online users are becoming addicted to the Internet in much the same way that others become addicted to drugs or alcohol. Addiction results include academic, social, and occupational impairment as well as marital discord and separation. Goldberg(1996) and Young(1996) parallel this phenomenon with "Pathological Gambling, officially defined by DSM-IV diagnosis criteria(APA, 1994).

Even though there is no formally accepted set of criteria for examining Internet dependence, Young(1996) suggests eight modified criteria for screening addictive Internet use by using the DSM-IV model for pathological gambling:

1. Do you feel preoccupied with the Internet(think about previous online activity or anticipate next online session)?
2. Do you feel the need to use the Internet with increasing amounts of time in order to achieve satisfaction?
3. Have you repeatedly made unsuccessful efforts to control, cut back, or stop Internet use?
4. Do you feel restless, moody, depressed, or irritable when you attempt to cut down or stop Internet use?
5. Do you stay online longer than originally intended?
6. Have you jeopardized or risked the loss of significant relationship, educational, or career opportunity because of the Internet?
7. Have you lied to family members, therapist, or others to conceal the extent of involvement with the Internet?
8. Do you use the Internet as a way of escaping from problems or of receiving a dysphoric mood(e.g., feelings of helplessness, guilt, anxiety, and depression)?

Young(1996) states that people who answered yes to five or more of these questions could be classified as Internet addicts(or Internet dependents) while those who answered yes to less than five questions could be considered average Internet users.

Internet Addiction Studies

Electronic or computer-mediated communications such as E-mail, online chatting, discussion groups, bulletin boards, and Multi-User Dungeons offer individuals the opportunity to experience social contact with no real social presence(King, 1996). The anonymity of the Internet allows people to express themselves freely and may even encourage them to contact strangers. Coate(1992) explains that an online community is a very easy, low-risk way to meet people.

Online communications offer the potential for stimulating emotional involvement, ease of accessibility, 24-hour availability, diverse personal connections, the hyper-personal nature of interpersonal relationships, the ability to witness others interacting, and an uninhibited, no-risk communications environment(King, 1996). These factors could be reasons why individuals become addicted to the Internet. Excessive Internet uses that include dependent behaviors and emotional cravings are similar to those of food abuse, gambling, and sexual addiction(Young, 1996). Internet use may also be an emotional escape from real life when social or emotional issues are painful(Kandell, 1998, Scherer, 1997). Excessive Internet use is problematic when it results in impaired functionings such as compromised grades or failure to take care of personal and/or professional responsibilities.

Recent studies now define Internet Addiction Disorder. Brenner(1996) posits that 30% of survey respondents report a failed

attempt to cut back on their Internet usage. Thompson(1996) finds that 72% of respondents report a dependence on the Internet, while 33% feel their Internet use has negative effects on their lives. 47% report some level of physical distress such as blurred vision or sleep disorders. Thompson concludes that Internet addiction is a phenomenon that deserves more study.

Young(1996, 1997a, 1997b) has conducted studies to confirm this phenomenon as a mental disorder. Young(1996) suggests that pathological Internet use may be likened to pathological gambling. Using gambling as a model, Internet addiction can be defined as an impulse-control disorder that does not involve an intoxicant. In her 1996 study, Young finds that Internet dependents spend an average of 38.5 hours per week online, compared with non-dependents spending an average of 4.9 hours per week. Thus, excessive use might be a distinguishable characteristic of dependence. Dependents also predominantly use the Internet for two-way communication functions such as chatting, MUDs(Multi-User Dungeons), news group discussions, or E-mailing, compared with non-dependents who mainly use the Internet for gathering information. Dependents spend less time with real people in exchange for solitary time in front of a computer.

Sexuality on the Internet is also one of the reasons for compulsive Internet use. Greenfield(1999b, 2000) found a high correlation between seeking sexuality on the net and excessive Internet use. Among his subjects who consider themselves Internet addicts, 62% regularly log on to pornography sites and report that they sometimes experience sexual arousal while online(Greenfield, 2000). Also, this type of Internet addict is more likely to establish online sexual relationships(Greenfield, 1999b). These findings reinforce the relationship between increased Internet use and sexual addiction.

Greenfield(1999a) identifies four types of web sites that are frequently abused:

- Pornography/Sexual material site: 30% of study subjects who use those sites frequently report that they are sex addicts.
- Chat/Discussion site: chatting and discussing are basic human needs for belongingness and social contact(Suler, 1996).
- Indiscriminate Web surfers: surfing without purpose or direction. There is no end on the net unlike a book, a television show, or a magazine. There is always another link to follow or another site to investigate.
- Shopping, gambling, and stock trading: it is easier to conduct online shopping, gamble, or trade stocks over the Internet than to deal with real people in real time.

Greenfield(1999a) reports that Internet addicts spend time online for web surfing(78%), gaming(62%), E-mailing(75%), chatting (57%), and shopping(20%)(Cited in Pike, 1999).

Internet Addiction among College Students

Murray(1996) insists that anyone who has access to the plethora of online services can become addicted. College students are particularly susceptible to compulsive Internet use because of free, on-campus Internet access. Kandell(1998, cited in Young, 1998) states that college students may be more vulnerable to Internet addiction because they are still in the process of forming their identities and new relationships. Students may get caught up in the Internet as an escape from the difficulties of real life.

Young(1996) and Scherer(1997) suggest excessive Internet

use is problematic for academic performance and relationship building. Young(1996) finds that Internet dependent students suffer from a lack of sleep. Some students report their inability to control their Internet use has resulted in an academic failure. Morhan-Martin(1997) and Scherer(1997) also suggest that significant academic failure and relationship impairment can result from uncontrolled Internet usage. Scherer(1997) states that 13% of weekly Internet users report dependent patterns that interfere with academic work, professional performance, or social lives. The study also finds that dependent students spend twice as much time online for leisure activities than non-dependent students. They are more likely to use the Internet for social experimentation and to seek out sexual or illegal material. They are more likely to use less popular services such as bulletin board services, chat rooms, and Multi-User Dungeons.

Alfred University administrators are alarmed that heavy Internet users' dropout rate is more than double that of other students. The University of Washington has limited the amount of Internet access available to their students to protect them from the academic failures result from excessive Internet use. Several other colleges have set up support groups for Internet addiction(Young, 1998).

Addiction Vulnerability

Admittedly, most Internet users are not Internet addicts. Among people who gamble or drink alcohol about 5-10% develop addictive behaviors(Potera, 1998). This correlation may also be true for Internet users. Generally, people who are lonely, bored, depressed, introverted, lack self esteem, or have a history of addictions

could be more easily addicted to the Internet(Young, 1996).

Shotton(1991) states that individuals who are introverted, are more educated than average, and are professional computer users are more easily addicted. He also explains that computer dependents are more likely to maintain a socially dysfunctional lifestyle; feeling comfortable with prolonged periods of social isolation. Young(1997b) states that dependents rank high in terms of being self-reliant, have a strong preference for solitary activities, and tend to restrict their social activities. They also are emotionally sensitive and reactive towards others, have low self-disclose, and are less conforming to social convention. Young(1996) states that more technically advanced computer users tend to deny their Internet use behaviors as addictive, even though their Internet use has become an integral part of their daily lives.

King(1996) says an individual's real-life frustrations may enhance a tendency to compulsive Internet use. Individuals may have an increased sense of equality in virtual communities. Cyber-anonymity allows one to be judged solely on the strength of one's ideas, regardless of one's status in real life. This status equalization allows users with less power and popularity in real life to feel more comfortable and respected in their virtual relationships. This social reinforcement may promote online communications at the expense of real world interactions. Thus, dependence on virtual communications may be exacerbated.

Fantasy proneness could be another reason why people use the Internet compulsively. Rauschenberger(1995) reports that fantasy proneness could indicate a risk for significant psychopathology. He proposes that in the fantasy world provided by a virtual community one's role and character could be flexible, self-determined, and very different from one's real life. This could produce a pathological

absorption, if the individual is predisposed to that state.

Suler(1996) proposes that there is a strong relationship between Internet addiction and motivations for fulfilling basic human needs. He suggests that Internet addiction may be understood by relating Maslow's hierarchy of needs theory to an investigation of cyberspace communication. Suler(1996) says online communication behaviors tend to be related to the third level of Maslow's hierarchy, a sense of belonging, interpersonal contact, and social recognition. He suggests that participation in a virtual environment can become an individual's primary means for social interaction.

The fourth level of Maslow's hierarchy, self esteem and a need for learning, can also be related to Internet addiction behaviors. Virtual communication environments allow individuals to learn how to interact with and influence others. They build their personalities in virtual communities and are rewarded with the status earned from these virtual societies(Suler, 1996). The Internet allows individuals to work out questions of identity and perhaps even realize inner interests, attitudes, and aspects of their personality that were previously hidden(Suler, 1996). Thus, some individuals may rely on the Internet to fulfill their basic need for socialization(Suler, 1996).

Research Questions

On the basis of the literature review, research questions and hypotheses are suggested to examine college students' Internet usage patterns, their motivations, and to explore their vulnerability to Internet dependence. These questions are:

1. What kinds of motivations are related to Korean college students' Internet use?
2. What kinds of motivations are related to certain types of

Internet services?

3. What are the differences between heavy Internet users and light Internet users?
4. Do students' Internet uses affect their other media uses?
5. Are there Internet addicts among Korean college students?
 - If there are, what kinds of motivations are related to their Internet usage?
 - What types of Internet services are used by Internet addicts?
 - What variables most effectively predict the degree of vulnerability of Internet addiction among Korean college students?

METHODOLOGY

Sampling and Data Collection

Classroom surveys were conducted May, 2000 at university in Seoul, Korea and 556 completed questionnaires were collected. 44 out of 556 questionnaires were discarded because of missing response values. 512 valid reports are analyzed.

Questionnaire Construction

The survey questionnaire consists of seven sections dealing with: (1) Internet use patterns, (2) motivations of Internet use, (3) Internet dependence test, (4) other media use after Internet use, (5) face-to-face communications after Internet use, (6) personal traits,

and(7) demographic information.

1. **Internet uses patterns:** Six kinds of Internet services are selected to reflect services most likely used by students including: information searching or surfing, E-mailing, discussion groups, online chatting, gaming, and shopping. A 7-point scale is used to determine students' usage of specific services(0=less than one day to 6=everyday). General information questions identify students' Internet usage patterns such as amount of time, frequency, place, computer or Internet connection ownership.

2. **Motivations of Internet uses:** Rubin's(1981, Cited in Rubin, Palmgreen & Sypher, 1994) questions about television viewing motivations are modified to identify Internet usage motivations. The researcher has added education, sexuality, and online shopping to the Rubin list of motivations. A 5-point scale(never to always) is used for subject responses.

3. **Internet Dependence Test:** Vulnerability to Internet dependence is examined by using Young's(1998) Internet addiction test. Twenty questions are asked using a 6-point answer scale to encourage study subjects to answer the questions.

4. **Other media uses patterns:** This section tests patterns of traditional media use. A 6-point scale(very increased to do not use) is used to discover the relationship between Internet use and traditional media use.

5. **Face-to-Face communications:** Students' face-to-face communications patterns are tested. This study asks how the subjects' communicate with their family, friends, and partners after the start of Internet usage. A 5-point scale(very decreased to very increased) is used for subject responses.

6. **Personal Traits:** These items seek to identify students' characteristics(e.g. whether they are extroverted or not) and to identify

the subjects' level of stress, depression, loneliness, and escapism. A 5-point Lifetree scale(strongly agree to strongly disagree) is used for subject responses.

7. **Demographic:** Students' academic status is asked including gender and age.

RESULTS

The study sample consisted of 269 male students(52.5%), and 242 female students(47.3%), and 1 non-response to the gender question. Among the 512 valid reports, there were 216 sophomores(42.2%), 140 seniors(27.3%), 117 juniors(22.9%), and 38 freshmen(7.4%). Sample bias may be indicated since sophomores outnumbered freshman two to one. The data reveal that 424 subjects(82.9%) are between 20 to 25 years of age, 66 subjects (12.9%) are between 26 to 27 years of age, 11 subjects(2.2%) are 18 to 19 years of age, ten subjects are between 28 to 35 years of age, and one subject did not answer this question.

Internet Use Patterns

Average students use the Internet over two hours per day (Mean=133.8 minutes, SD=100.13). Students primarily use the Internet for information searches(42.06 minutes), followed by gaming(26.94 mins), E-mailing(23.44 mins), discussing(18.95 mins), chatting(11.25 mins), and shopping(2.95 minutes).

Subjects report Internet use 5.45 days per week and over half of them use the Internet at home(55.5%), followed by use at

Table 1. Factor Analysis of Motivation Items.

	Factors						
	1	2	3	4	5	6	7
Occupy	0.817						
Boring	0.816						
Habit	0.753						
Like	0.744						
Entertainment	0.686						
Amuse	0.658						
Calm Activity	0.581						
Research		0.793					
Information		0.792					
Assignment		0.638					
Learn some		0.577					
Get away			0.703				
Forget some			0.654				
Excite			0.517				
Thrill							
Don't be Alone				0.819			
Less Loneliness				0.751			
Make friends				0.577			
Keep touching							
Adult Picture					0.953		
Sex story					0.949		
Purchasing						0.875	
Compare price						0.841	
Relax							0.831

Extraction Method: Principal Component Anaysis
 Rotation Method: Varimax with Kaiser Normalization
 Overall Measure of Sampling Adequacy: .848
 Bartlett's Test of Sphericity: 5373.28(p<.001)

school(29.3%), and the Internet cafe(or PC room) in Korea(12.9%). 474 students(92.6%) have a computer and 38 students(7.4%) do not. 371 students(72.5%) have an Internet connection at home and 140 students(27.3%) do not. The average length of Internet use by students is over two years(Mean=24.36 months, SD=15.16), ranging from 2 months to 84 months.

Factor Analysis of Motivation Items

A factor analysis was conducted for data reduction with motivation items. Through the principal component factor analysis with varimax rotation, 7 factors were drawn from 24 motivation items based on eigenvalue(criterion is above one) and the screen test. Factor 7 was discarded because it consists of only one item. Six factors explain 62.28 % of total variance. The results are presented in Table 1.

Factor 1(Boredom/Entertainment) eigenvalue = 7.03, accounting for 29.31% of variance. Pass time, habit, entertainment, and relaxation items are highly loaded. Factor 2(Education/Research) eigenvalue = 2.31, accounting for 9.61% of variance. All items were highly loaded. Factor 3(Escapism) eigenvalue = 2.21, accounting for 9.20% of variance. All escapism items and one arousal item are highly loaded. Factor 4(Loneliness) eigenvalue = 2.05, explaining 8.55% of variance. Factor 4 includes two Loneliness items and one Social Interaction item. Factor 5(Sexuality) eigenvalue = 1.99, explaining 8.28% of variance. It has two Sexuality items with high loading scores. Factor 6(Online Shopping) eigenvalue = 1.41, explaining 5.86% of variance.

Internet Use and Motivation Factors

A correlation test was conducted in order to investigate which motivation factors are closely related to students' Internet use. Test results show that all six-motivation factors correlate to students' Internet use. Five factors have relatively low correlation to students' Internet use. However, Factor 1(Boredom/Entertainment) shows a

Table 2. Correlation between Internet Use and Motivation Factors

	Amount of internet use
Factor 1 (Boredom/Entertainment)	.31 (p < .001)
Factor 3 (Escapism)	.16 (p < .001)
Factor 4 (Loneliness)	.14 (p < .05)
Factor 6 (On-line Shopping)	.10 (p < .05)
Factor 2 (Education/Research)	.09 (p < .05)
Factor 5 (Sexuality)	.08 (p < .05)

moderate correlation to students' Internet use(See Table 2). Thus, boredom may lead students to entertain themselves by surfing the Internet, which may result in habitual use of the Internet. Also, subjects use the Internet when they want to escape from real world problems(Factor 3), when they are lonely(Factor 4), and when they shop online(Factor 6). It was very interesting that there were relatively very weak relationship between students' Internet use and sexuality(Factor 5), and education/information seeking(Factor 2). Korean college students, then, rarely use the Internet for fulfilling sexual desires or for research.

Motivation Factors and Internet Services

This study tests the relationships between motivation and the kinds of Internet services students use. Factor 1(Boredom/Entertainment) has weak correlations with four Internet services: gaming ($r = .22, p < .001$), discussion group($r = .17, p < .001$), E-mailing($r = .15, p < .05$), and chatting($r = .14, p < .05$). Factor 2(Education/Research) has weak correlations to Internet search services($r = .22, p < .001$) and shopping($r = .10, p < .05$). Factor 3(Escapism) relates to gaming($r =$

.19, $p < .001$) and discussion groups($r = .12$, $p < .05$). Factor 4(Loneliness) relates to discussion groups($r = .19$, $p < .001$), E-mailing($r = .15$, $p < .05$), and chatting($r = .16$, $p < .05$). Factor 5(Sexuality) relates to gaming($r = .25$, $p < .001$), chatting($r = .10$, $p < .05$) and negatively relates to E-mailing($r = -.20$, $p < .001$) and shopping($r = -.12$, $p < .05$). Factor 6(Online shopping) only relates to shopping($r = .30$, $p < .001$).

Thus, students usually use interactive Internet services when they are bored, lonely, or escape from problems. Students use Internet search services for information seeking or for online shopping. Students who want to fulfill sexual desires use Internet game and chat rooms, but are not likely to use E-mailing and shopping services. Results show that there are online games that contain sexual content which students use for sexual gratification.

Internet Use and Other Media Uses

Data indicate that students' other media uses decline after they start to use the Internet. Students report that when their Internet use increases their use of TV, radio, newspaper, magazine,

Table 3. Correlation between Internet use and other media uses

	Internet use		
	Pearson r	Mean	Std. Deviation
TV watching	.20 ($p < .001$)	2.8	1.18
Radio listening	.25 ($p < .001$)	2.74	1.35
Newspaper reading	.20 ($p < .001$)	2.64	1.18
Magazine reading	.17 ($p < .001$)	2.69	1.22
Letter sending	.14 ($p < .05$)	3.77	1.35
Telephoning	.14 ($p < .05$)	2.44	1.2

and telephone decreases. In addition, their use of postal mail service is significantly decreased by use of the Internet(See Table 3).

Internet Use and Face-to-Face Communication

Students report Internet usage causes a slight decrease in face-to-face communication with friends, families, and partners(See Table 4).

Table 4. Correlation between Internet use and Face-to-Face communications

	Internet Use		
	Pearson r	Mean	Std. Deviation
Friend	.09 (p < .05)	1.94	0.87
Family	.23 (p < .001)	1.92	0.96
Partner	.16 (p < .01)	1.71	0.8

Light vs. Heavy Internet Users

The median point(110 minutes per day) is used to group subjects into two categories; Light and Heavy Internet Use. 258 students are categorized as Light Internet users and 254 students as Heavy Internet users. A t-test examines the difference between these two groups regarding motivation factors and kinds of Internet services being used.

Heavy Internet users are more likely to use the Internet for 5 out of 6 motivation factors(except the online shopping factor) than Light Internet users. Heavy Internet users also use all Internet services more and longer(See Table 5). Data indicates that heavy Internet use is positively related to students' gratification factors.

Table 5. T-test of Motivation Factors and Internet Services between Light and Heavy Internet Users.

	T value	Mean difference
Boredom/Entertainment	3.83 (p < .001)	0.34
Education/Research	2.32 (p < .05)	0.21
Escapism	4.00 (p < .001)	0.36
Loneliness	2.22 (p < .001)	0.2
Sexuality	2.68 (p < .05)	0.24
Search	12.06 (p < .001)	33.1
Discussion group	7.01 (p < .001)	18.59
E-mailing	8.49 (p < .001)	15.49
Chatting	6.83 (p < .001)	18.15
Gaming	10.35 (p < .001)	38
Shopping	4.12 (p < .001)	3.68

Heavy Internet users are less likely to use other media than Light Internet users. Heavy Internet users report other media uses are slightly more decreased except when sending letters. Heavy Internet users also report a higher decline in their face-to-face communications with family. There was, however, no difference in face-to-face communications with friends and partners between both user groups(See Table 6).

Table 6. T-test of Other media uses and Face-to-Face communications between Heavy and Light Internet users.

	T value	Mean difference
TV watching	3.71 (p < .001)	0.39
Radio listening	4.48 (p < .001)	0.59
Newspaper reading	3.46 (p < .01)	0.37
Magazine reading	2.94 (p < .01)	0.34
Telephoning	3.24 (p < .01)	0.37
Family communication	3.47 (p < .01)	0.3

Internet Dependency in Korea

Young's(1996) Internet dependency test suggests that if a subject's sum of scores is 20-49, average online use is indicated. Scores of 50-79 suggest moderate Internet dependence with occasional or frequent problems due to the Internet. Scores of 80-100 suggests an Internet dependence that is causing significant problems. This study finds no significant Internet dependence among Korean college students. However, of this study's 512 subjects, 146 students(28.5%) are moderately dependent while 357 students(69.7%) can be defined as AIUs.

Differences of Internet Services Uses and Motivations

MIDs(MIDs) use discussion groups, chat rooms, and online games much longer than average Internet users(AIUs). MIDs are more likely to use the Internet for avoiding boredom, escaping from life problems, and avoiding loneliness. MIDs use the Internet as a two-way, interactive communication device when bored, alone, or stressed(See Table 7).

Table 7. T-test of Internet Services and Motivations Between Moderate Internet Dependents(MIDs) and Average Internet Users(AIUs)

	T value	Mean difference
Discussion group	5.32 (p < .001)	16.1
Chatting	5.00 (p < .001)	15.14
Gaming	5.42 (p < .001)	23.8
Boredom/Entertainment	8.22 (p < .001)	0.78
Escapism	5.45 (p < .001)	0.54
Loneliness	6.00 (p < .001)	0.59

Differences of Other Media Uses and Face-to-Face Communications

MIDs use all traditional media less. Their face-to-face communications with friends, families, and partners are more decreased than AIUs. MIDs report a decrease in their traditional media uses in comparison to AIUs. Average users report a slight decrease in other media uses because of the Internet. Traditional mail service use declines more for the Moderate Internet dependent than for the Average Internet user. MIDs also report a slight decrease in their face-to-face communications while the AIUs report a rare decrease(See Table 8).

Table 8. T-test of Other Media Uses and Face-to-Face Communications between MIDs and AIUs

	T Value	Mean difference
TV watching	9.58 (p < .001)	1.04
Radio listening	7.27 (p < .001)	1.03
Newspaper reading	7.93 (p < .001)	0.9
Magazine reading	6.19 (p < .001)	0.79
Letter sending	3.61 (p < .001)	0.53
Telephoning	4.63 (p < .001)	0.59
Friend communication	7.45 (p < .001)	0.62
Family communication	9.84 (p < .001)	0.87
Partner communication	7.96 (p < .001)	0.71

Length of Internet use and Internet dependency

MIDs have been logging onto the Internet an average of 27.7 months while AIUs have used the Internet for 23 months. 60.3% of MIDs say they have used the Internet for one or two years. The remaining 39.7% of MIDs report using the Internet for over three years. Data suggests that Korean students' Internet dependency is primarily established at the early stages of Internet

use.

Other variables and Internet dependency

Little difference is noted for computer ownership at home between MIDs(92.5%) and AIUs(93%). However, 84.9% of MIDs have Internet connections at home versus 67.5% of AIUs. Also, 70.5% of MIDs report they use the Internet everyday while 34.6% of AIUs do. Some difference is seen for place of Internet use between the two groups. Both groups use the Internet at home(MID: 67.6%; AIU: 51.1%). However, MIDs are less likely to use the Internet at school(MID: 15.9%; AIU: 34.8%).

Predictors of Internet Dependency

Multiple regression with the enter method was conducted to test which variables more effectively predict the degree of Internet dependency among students. The results show that Eta is .508($F=23.01$, $df=20/445$, $p<.001$) explaining 50.8% of the total variance of the degree of Internet dependency. Motivation factors such as boredom/entertainment, loneliness, and escapism, and amount of time of Internet use are important variables to predict the degree of dependency. E-mail service use and academic status showed negative relationships to Internet dependency. These results suggest that students who use E-mail services more frequently are not likely to become Internet dependents. As long as the students' academic status remains high they are less likely to be Internet dependent. Frequency of Internet use, gender, online shopping and sexuality factors show relatively weak correlation to Internet dependency(See Table 9).

Table 9. Multiple regression of a composite set of Independent variables with Internet dependency

Independent variables	Beta	T value
Boredom/Entertainment Factor	0.366	9.40 (p < .001)
Loneliness Factor	0.309	8.85 (p < .001)
Escapism Factor	0.263	7.64 (p < .001)
Amount of time of Internet use	0.244	2.12 (p < .05)
E-mail service	-0.139	2.91 (p < .05)
Frequency of Internet use	0.138	3.40 (p < .05)
Academic Status	-0.114	2.06 (p < .05)
Gender	0.111	2.23 (p < .05)
Online shopping motivation Factor	0.098	2.67 (p < .05)
Sexuality motivation Factor	0.094	2.20 (p < .05)

Discussion & Conclusion

The study found significant findings to explain college students' Internet use patterns, motivations, and the impact of Internet use on other media use and communication. Further this study explored the degree of Internet dependency in college students. Some findings confirmed existing research but other findings show slightly different results. College students' use of the Internet(at over two hours per day) is longer than all age groups(at one hour per day) according to NCA's statistics(2000). In general, they mainly use the Internet as a two-way, interactive communication device when they are bored, lonely, and when they want to get away from their problems. They also use the Internet for shopping, searching for information and satisfying sexual desires. The study found differences in Internet use patterns and motivations between heavy and light user groups. Students who use the Internet heavily

are more likely to use the Internet for avoiding boredom, loneliness, or for escapism than light Internet users. In addition, heavy Internet users tend to use all kinds of Internet services and use them longer than light users.

It is remarkable that there was a weak relationship between the amount of Internet use and sexual motivation. Based on reviewing other research, this study expected sexual gratification to be one of the main motivations of Internet use. Greenfield(1999b, 2000) found a high correlation between seeking sexual gratification and excessive Internet use. The weak relationship between the amount of Internet use and sexual gratification may stem from a cultural difference — Confucianism. We assume that students tend to report a neutral position about sexually related motivation questions because of social and cultural norms that prohibit students from accessing sexually oriented materials.

Students' Internet use negatively affected their use of traditional media and face-to-face communication with others. Students used TV, radio, newspapers, magazines, letters, and telephones less, and communicated less with friends, family and partners after they started to use the Internet. Interestingly, heavy users still actively communicated with their peer group, but communicated less with family members like light users. These findings indicate that the Internet is replacing traditional media use and face-to-face communication.

Unlike many Internet addiction studies, there is no indication of serious Internet dependency among South Korean college students. However, this study found that the possibility of Internet addiction exists since many students(28.5%) are in the Moderate Internet Dependent(MID) category. This study also partially confirmed Young's(1997a) findings that suggested Internet

dependency is more likely to happen in the early stage of Internet use. Specifically, 60.3% MIDs have used the Internet for one or two years while 39.7% of them have used the Internet for over three years. Thus, Internet dependency could be considered a transitory medium use behavior.

Three motivation factors relate to Internet dependency: MIDs used the Internet to avoid boredom, loneliness, and to escape from the problems of life were all motivation for dependency. MIDs and AIUs showed different patterns in use of other media and face-to-face communication as well. MIDs were less likely to use other media forms and face-to-face communication than AIUs. Also, Heavy Internet users' face-to-face communication patterns showed only a significant decrease in family communication, while MIDs were less likely to communicate with friends, partners, and family members.

Internet addiction can be considered an active addictive behavior. The medium's anonymity and interactivity make itself more attractive than the other media forms because the medium allows its users to build new relationships and to communicate anonymously either synchronously or asynchronously with other anonymous people. When people use the Internet to communicate with others, they have immediate feedback and reward, particularly within MUD's or chat rooms. In conclusion, both the anonymity and the interactivity of the Internet may be the two main reinforcements of compulsive behaviors.

Most psychologists argue that cutting down on Internet use is not the correct way to avoid Internet addiction. They recommend that patients suffering from this disorder increase real social relationships to fulfill their basic human needs. Psychologists recommend a self-regulation method, in which users check the

amount of times, the purpose, and the frequency of using the Internet(King, 1996; Young, 1996). Increasing the amount of time and frequency may be a warning sign of addiction. Purposeless web surfing and chatting also may result in addictive behavior. Therefore, Internet users may recognize their purpose and amount of use to avoid addiction.

Arguably, the Internet is an advanced technology that can increase the amount and convenience of human communication. Yet studies have begun to indicate that it may be a harmful technology that can have negative effects. More research is needed to discover the patterns of Internet addiction, what factors contribute to this behavior, and what populations are most at risk.

References

- Abela, D.(1997), "Clicking the night away, A Uses and Gratifications Approach to Internet use in Malta, Unpublished dissertation," University of Malta,
- Ahn, J, & Kim, D.(2000), *Study of Korean teenagers' Internet addiction symptoms and their accessibility of sexual materials*, Korean Women's Media Activist Groups, Seoul, Korea.
- American Psychiatric Association(1994), *Diagnostic and Statistical Manual of Mental Disorders*(4th ed.), Washington, DC: Author.
- Babbies, E.(1992), *The Practice of Social Research*, 6th edition, Wadsworth Publishing Company: Belmont, CA.
- Brenner, V.(1996), *An Initial Report on the Online Assessment of Internet Addiction: the First 30 Days of the Internet Usage*, [Online], Available: <http://www.ccsnet.com/prep/pap/pap8b/638b012p.txt>.
- Bryant, J, & Zillmann, D.(1984), "Using Television to Alleviate Boredom and Stress: Selective Exposure as a Function of Induced Excitational

- states," *Journal of Broadcasting*, 28, 1-20.
- Butler, K, D.(1995), *A Uses and Gratifications Study of the Internet*, Unpublished Master Thesis, San Jose University.
- Coate, J.(1992), "Cyberspace Innkeeping: Building Online Community," [Online], Available: <http://www.sfgate.com/~tex/innkeeping>.
- Cohen, E., Rakowitz, R., & Patel, V.(2000), "US Online Demographics: Fundamentals and Forecasts, Spring 2000," [Online], Available: http://www.jup.com/sps/research/info/nfo_overdoc=jocs00&query=internet%7Cdemographics
- CommerceNet/Nielsen(1998), *The CommerceNet/Nielsen Internet Demographic Survey*, [Online], Available: <http://www.commerce.net/news/press/19980824b.html>.
- CommerceNet(2000), "World Internet Population," [Online], Available: <http://www.commerce.net/research/stats/wwstats.html>
- Cook, R.(2000), "Report: Internet Not Just for Kids Anymore," *E-Commerce Times*, April, 4th, 2000, [Online], Available: <http://www.ecommercetimes.com/news/articles2000/000404-2.shtml>
- Cooper, A., Scherer, C., Boies, S., & Gordon, B.(1999), "Sexuality on the Internet: From Sexual Exploration to Pathological Expression," *Professional Psychology: Research and Practice*, 30(2), 154-164.
- Creed, A.(2000), "Korea Boosts Net Users to Over 11million," *E-Commerce Times*, [Online], Available: <http://www.ecommercetimes.com/news/articles2000/000315-nb1.shtml>
- Custer, R., Glen, A., & Burns, R.(1975), "Characteristics of Compulsive Gamblers," Paper presented at the Second Annual Conference on Gambling, Las Vegas, NV.
- Dittmar, M, L.(1994), "Relations Among Depression, Gender, and Television Viewing of College Students," *Journal of Social Behavior and Personality*, 9, 317-328.
- FIND/SVP.(1997), *The American Internet User Survey*, [Online] Available: <http://erta.findsvp.com/internet/newinet.html>,
- Frances, A., First, M, B., & Pincus, H, A.(1995), *DSM-IV Guidebook*,

Washington D.C.: American Psychiatric Press, Inc.

- Gaffney, J.(1999), *College Students are Ready to Buy Online*, [Online], Available: http://www.channelseven.comresearch/1999features/surv_19990503.shtml
- Gong, E, J.(1998), *Experts Disagree on 'Internet Addiction': Caught in the Web*, [Online], Available, <http://archive.abcnews.go.com/sections/newsuse/netaddict/index.html>
- Greenfield, D, N.(1999a), *Virtual Addiction: Help for Netheads, Cyberfreaks, and Those Who Love Them*, Oakland: New Harbinger Publications.
- _____(1999b), *The Nature of Internet Addiction: Psychological Factors in Compulsive Internet Use*, Presentation paper at the 1999 meetings of the American Psychological Association, Boston, Massachusetts, August 29, 1999, [Online], Available: <Http://www.virtual-addiction.com/internetaddiction.html>
- _____(1999c), *How Do I Know if I Have a Problem with my Internet use?: Internet Addiction Self-Appraisal Test*, [Online], Available: <http://www.virtual-addiction.com/appraosal.htm>
- _____(2000), *The Net Effect: Internet Addiction and Compulsive Internet Use*, [Online], Available: <http://www.virtual-addiction.com/neteffect.html>
- Global Research(2000), *Global Internet Statistics(by Language)*, [Online], Available: <http://www.glresearch.com/globstats/index.php>
- Huitt, W, G.(1998), *Maslow's Hierarchy of Needs*, [Online], Available: <Http://www.valdosta.edu/~whuitt/psy702/regsys/maslow.html>
- Hunter, C, D.(1997), *The Uses and gratifications of the Web*, [Online], Available: http://www.bc.edu/bc_org/avp/cas/commm/WebUses.html
- Hwang, J, K.(1999), *Korean teenagers' Internet uses*, Seoul, Korea: Korea Teenager Development Center.
- Kiesler, S., & Sproul, L.(1987), *Computing and change on campus*, Cambridge, MA: Cambridge University Press.
- King, S, A.(1996), *Is the Internet addictive, or are addicts using the Internet?* [Online] Available: <http://rdz.stjohns.edu/~storm/iad.html>.

- Koerner, B. I.(2000), *A lust for profits*, U.S, News & World Report, March 27, 2000, pp. 36-44,
- “Korean high-speed Internet users reach 2.2 million,” [Online], Available: <http://www.cnn.com/2000/TECH/computing/09/04/orea.internet.reut/index.html>.
- Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T., & Scherlis, W.(1999), “Internet paradox: a social technology that reduces social involvement and psychological well being,” *American Psychologist* 53(9), 1017-1031.
- Lever, R.(1998), “Internet commerce is heating up cyberspace,” [Online], Available: <http://search.nanado.net/plweb-cgi/+ntframes+16200+0+0>.
- McIlwraith, R, D.(1998), “I’m addicted to television: the personality, imagination, and TV watching patterns of self-identified TV addicts,” *Journal of Broadcasting & Electronic Media*, 42(3), 371-387.
- Murray, B.(1996), “Computer addictions entangle students,” [Online], Available: <http://www.apa.org/monitor.jun96/online.html>,
- NCA(National Computerization Agency)(2000), [Online], Available: <http://www.nca.or.kr>
- Negroponte, N.(1995), *Being digital*, New York: Vintage Books.
- Nielsen Media Research(1999), “TV viewing in Internet Households,” [Online], Available: <Http://Nielsenmedia.com>
- NUA Internet Surveys(2000), [Online], Available: http://ww.nua.ie/surveys/how_many_online/index.html
- Ornstein, A.(1995), “Erotic passion: a form of addiction,” In Scott Dowling (Ed), *The psychology and treatment of addictive behavior*(pp. 43-64), Madison, CT: International Universities Press Inc.
- Perry, T, T., Perry, L, A., & Hosack-Curlin, K.(1998), “Internet use by university students: an interdisciplinary study on three campuses,” *Internet Research: Electronic Networking Applications and Policy*, 8, pp. 136-141.
- Perlman, D, & Johnson, A.(2000), “Internet exceeds 2 billion pages, Cybeillance study projects Internet will double in size by early 20

- 01," [Online], Available: <http://www.cyverllance.com/newsroom/pressr/000710.asp>
- Pike, R.(1999), "Log on, tune in, drop out, ABCNEWS.com," [Online], Available: <http://abcnews.go.com/sections/living/dailynews/netaddiction032699html>
- Pitkow, J., & Kehoe, C.(1995), "Results from the Graphics, Visualization, and usability Center's 4th WWW User Surveys," *Georgia Institute of Technology*, [Online], Available: http://www.cc.gatech.edu/gvu/user_surveys/survey-10-1995,
- Potera, C.(1998), "Trapped in the web," *Psychology Today*, 31, 2, pp. 66-69.
- Potts, R, & Sanchez, D.(1994), "Television viewing and depression: No news is good news," *Journal of Broadcasting & Electronic Media*, 38, pp. 79-90.
- Rauschenberger, S, H, & Lynn, S, J.(1995), "Fantasy proneness, DSM-III-R Axis I Psychopathology, and Dissociation," *Journal of Abnormal Psychology*, 104(2), pp. 373-380.
- Rubin, R, B., Palmgreen, P, & Sypher, H, E.(1994), *Communication research measures: a source book*, The Guilford Press: New York.
- Scherer, K.(1997), "College life online: healthy and unhealthy Internet use," *Journal of College Student Development*, 38(6), pp. 655-665.
- Sefton, D.(2000), "The big online picture: Daily Web surfing now the norm," *USA Today*, March 22, 2000, 3D.
- Shotton, M.(1991), "The costs and benefits of 'computer addiction'," *Behavior and Information Technology*, 10(3), pp. 219-230.
- Sklaroff, S.(1999), "E-mail," *U.S. News & World Report*, March, 22, pp. 54-55.
- Smith, R.(1986), "Television addiction," In J, Bryant & D, Anderson(Eds.) *Perspective on media effects*, pp. 109-128, Hillsdale, NJ: Lawrence Erlbaum.
- Stempel, G, H., Hargrove, T., & Bernt, J, P.(2000), "Relation of growth of use of the Internet to changes in media use from 1995 to 1999," *Journalism & Mass Communication Quarterly*, 77(1), pp. 71-79.
- Stoll, C.(1995), *Silicon snake oil: Second thoughts on the information highway*,

New York: Doubleday.

Suler, J.(1996), "Computer and cyberspace addiction," [Online], Available: <http://www.rider.edu/users/suler/psyber/cybaddict.html>,

Thompson, S.(1996), "Internet connectivity: addiction and dependency study," *Honors Thesis in Media Studies*, Pennsylvania State University, [Online], Available: <http://www.personal.psu.edu/sjt112/iads/thesis.html>

Turkle, S.(1995), *Life on the screen: identity in the age of the Internet*, New York: Simon & Schster.

Wurmser, L.(1995), "Compulsiveness and conflict: the distinction between description and explanation in the treatment of addictive behavior," In Scott Dowling(Ed), *The psychology and treatment of addictive behavior*, pp. 43-64, Madison, CT: International Universities Press Inc.

Yoo, H.(1996), "The gratifications of the Internet," [Online], Available: <http://www.apa.org/releases/internet.html>

Young, J, R.(1998), "Students are unusually vulnerable to Internet addiction," *Chronicle of Higher Education*, 44(22), p, A25.

Young, K.(1996), "Internet addiction: the emergence of a new clinical disorder," Paper presented at the 104th annual convention of the American Psychological Association, August 16, Toronto, Canada,

_____(1997a), "What makes the Internet addictive: potential explanations for pathological Internet use," Paper presented at the 105th annual conference of the American Psychological Association, August 15, Chicago, IL, [Online] Available: <http://netaddictioin.com/articles/habitforming.htm>

_____(1997b), "Internet addiction: personality traits associated with its development," [Online], Available: http://netaddiction.com/articles/personality_correlates.html

_____(1998), "What is Internet addiction?," [Online], Available: <http://netaddiction.com/whatis.htm>

■ 국문초록

대학생들의 인터넷 이용 형태와 이용동기 그리고 인터넷 중독 가능성에 관한 연구

미국에서 이루어진 인터넷 중독 현상에 대한 초기 연구는 인터넷 중독을 알코올중독과 같은 개인의 정신적 질병으로 간주하는 의사들에 의해 주도되었다. 그러나 사회현상으로서 인터넷 중독에 대한 사회과학자들의 관심이 증대되면서 인터넷 중독의 원인을 밝히는 본격적인 연구가 이루어진다. 인터넷 이용과 초고속 인터넷 망 보급속도에서 세계최고 수준을 자랑하는 우리의 경우에도 인터넷 이용에 따른 많은 부정적인 현상들이 나타남으로써 사회적인 문제로 대두되고 있다. 이에 따라 인터넷 중독에 대한 일부 연구가 수행되었는데 이들 연구들은 인터넷 이용패턴과 이용동기를 개별적으로 분석하고 인터넷 중독정도를 측정하는 차원에 머물고 있다. 즉, 인터넷 중독의 원인을 분석하는 차원에 이르지 못하고 있다. 또한 대부분의 연구들이 10대 청소년을 연구대상으로 하고 있기 때문에 다른 연령층의 인터넷 이용특성을 파악하는 데 한계를 가지고 있다.

이 같은 현실 인식을 바탕으로 본 연구는 2000년에 발표된 한국전산원 통계수치에서 인터넷을 가장 많이 이용하는 집단으로 조사된 대학

생들을 연구대상으로, (1) 이들의 인터넷 이용패턴과 이용동기를 밝히고 (2) 이들 변인들과 인터넷 중독과의 상호관련성을 분석하며 (3) 인터넷 중독의 정도와 중독요인을 조사하고 (4) 마지막으로 인터넷 이용이 다른 미디어 이용과 면대면 커뮤니케이션에 미치는 영향을 분석하고 있다.

본 연구의 자료는 2000년 5월 8일부터 19일까지 2주간에 걸쳐 서울시내 대학생들을 대상으로 강의시간에 설문지를 배포하고 응답자가 설문지에 답하는 방법을 통해 수집되었다. 수집된 556명의 설문지 가운데 유효한 512명의 설문지가 통계적인 방법을 통해 분석되었다. 설문지는 (1) 인터넷 이용패턴 (2) 인터넷 이용 동기 (3) 인터넷 의존도 (4) 인터넷 이용 이후 다른 미디어 이용정도 (5) 인터넷 이용 이후 면대면 커뮤니케이션 정도 (6) 인구통계학적 변인을 측정하는 질문 내용으로 구성되었다.

통계 분석 후 나타난 몇 가지 주요결과를 요약하면 아래와 같다.

(1) 이용동기와 인터넷 이용과의 상호관련성

이용동기를 요인 분석한 결과, 6개의 이용동기가 나타났는데 오락이 가장 주요한 동기였으며 다음으로 교육/정보, 현실도피, 외로움, 쇼핑, 그리고 성적 만족 순으로 나타났다. 이용 동기들을 인터넷 이용시간과의 상호관련성을 통계 분석한 결과 기존 연구결과와 달리 성적 만족이 6가지 요인 가운데 가장 낮은 상호관련성을 보였다. 또한 이용동기 분석에서 두 번째 높게 나타난 교육/정보 역시 성적 만족 다음으로 낮은 상호관련성을 보여주었다. 이는 대학생들의 인터넷 이용이 10대들의 인터넷 이용형태와 상당히 다르다는 것을 보여주는 것으로 본 연구에서는 수행하지 못한 이 같은 결과가 나오게 된 이유를 밝히는 후속연구가 필요할 것으로 보인다.

(2) 인터넷 이용동기와 인터넷 서비스와의 상호관련성

오락은 게임, 토론그룹, 전자메일, 채팅과 상호관련을 가진 것으로 나타났으며, 교육/정보는 검색과 쇼핑, 현실도피는 게임과 토론그룹, 외로움은 토론그룹, 전자메일과 채팅, 쇼핑은 온라인 쇼핑과 상호관련성이 있는 것으로 분석되었다. 흥미로운 사실은 성적 만족과 관련해서 게임과 채팅은 긍정적인 상호관련을 가진 것으로 나타난 반면 전자메일 서비스 이용은 성적 만족과 부정적인 상호관련을 가진 것으로 분석되었다. 이는 대학생들이 지루하게 느끼거나 외로움을 느낄 때 전자메일을 주로 이용하지만 성적 만족을 위해 전자메일을 이용하지 않고 있다는 사실을 보여주는 것이다.

(3) 인터넷 이용 이후 다른 미디어와 면대면 커뮤니케이션과의 관계

인터넷을 이용한 후 응답자들의 전통적인 미디어(텔레비전, 라디오, 신문, 잡지, 편지, 전화) 이용이 감소되었으며 친구, 가족, 이성친구와의 면대면 커뮤니케이션 역시 감소된 것으로 나타났는데 이 같은 감소가 인터넷 이용과 관련이 있는 것으로 나타났다.

(4) 인터넷 중독 정도와 중독 요인

10대들을 대상으로 한 기존 연구에서 나타난 인터넷 중독 현상이 대학생 집단에서는 나타나지 않았다. 그러나 응답자의 28.5%가 중독집단으로 발전될 가능성을 가진 잠재적인 인터넷 의존자(Moderate Internet Dependent)로 조사되었다. 인터넷 중독을 설명하는 요인으로 이용동기 가운데 오락, 외로움과 현실도피가 주요 변인으로 나타났으며 인터넷 이용시간 역시 주요변인으로 분석되었다.

흥미 있는 결과는 선행연구에서 인터넷 중독과 밀접한 관련 있는 인터넷 서비스로 조사된 게임과 채팅이 주요변인으로 나타나지 않았다는 것이다. 또한 인터넷 이용동기와 이용시간과의 상호관련 조사 결과에서처럼 전자메일서비스는 인터넷 중독과 부정적인 관계가 있는 것으로 조사되었다.