

# A Study of Internet Addiction: Status, Causes, and Remedies\*

- Focusing on the alienation factor -

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**Abstract :** This paper examines internet addiction from the perspective of consumer studies. Internet addiction could be an interesting issue for consumer studies because it is a sort of consumer behavior that has drawn a lot of social concerns in rapidly informatized era. First, the paper explores the *status quo* of internet addiction in Korea through the analysis of a questionnaire survey. Secondly, it explains causes of internet addiction focusing on alienation in addition to personality and demographic factors. Thirdly, it describes the characteristics of the behavior of internet-addictive users clustered by internet addiction degree. Based on these descriptions and analyses, the study provides suggestions for establishing more effective consumer policies and educational programs to help limit the growth of internet addiction.

**Key Words :** internet addiction, alienation, addictive consumption

## I. INTRODUCTION

The number of internet users is increasing dramatically. As of December, 2002, about 665 million people uses the internet (eTForcasts; quoted from Chosunilbo, 2002). In Korea, the sixth largest internet country in the world, the number of internet users is up to 26.9 million, nearly 60% of the entire population. Obviously, these numbers suggest that the internet has

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become a vital tool for many Koreans today. They are able to access useful information, communicate with people all over the world, buy various goods, and reserve tickets with a single 'click' via internet. Indeed internet has brought many good things to our life. In an academic field of Consumer Studies, the subject on internet usage is an emerging topic, too. Three quarters of the articles (nine out of twelve) in the recent *Journal of Consumer Studies* (13: 4) are about internet related issues.

However, in spite of its merits, the internet does pose some serious problems including information divide; information overload; information pollution, such as pornographic contents; and information insecurities. Interestingly, internet addiction bears many similarities to other compulsive consumer behaviors, and its study as a type of non-rational consumption behavior could be an interesting issue in consumer studies. Therefore, this study will provide understandings of the status and causes of internet addiction.

To accomplish this, our study delves into the problem of internet addiction through the perspective of consumer studies. It examines (1) general trends of internet addiction in Korea, (2) consumer-related factors regarding internet addiction, and (3) the characteristics of internet addictive behavior. First, the paper explores the *status quo* of internet addiction in Korea by using newly developed measures. Secondly, it explains the causes of internet addiction while focusing on alienation in addition to personality and demographic factors. Thirdly, it describes the characteristics of internet users clustered by their degree of internet addiction. In the conclusion, we hope to provide helpful information for establishing relating consumer policies or consumer education programs to help stop the growth of internet addiction.

The study of internet addiction raises a very important issue within the field of consumer studies in two ways. First, in a theoretical context, it can delve into the concept of addictive consumption, which has been neither popularly nor easily studied in consumer studies. In fact, we expect that this study may contribute to laying a theoretical foundation for the modeling of addictive consumer behavior. Secondly, in a practical context, it may contribute to suggesting more effective consumer policies and consumer education programs to encourage proper and responsible consumer behavior in the information society.

## II. THEORETICAL BACKGROUND

### 1. Addictive consumption

Addiction, as a concept, originated in the medical and behavioral sciences. In a medical sense, it means a condition that depends, mentally and physically, on a specific kind of substance, especially on drugs (Lee, 1996). Consumers may become addicted not only to a physical substance but also to a problematic behavior. While a few scholars believe that the term *addiction* should be applied only to cases involving the ingestion of a drug (Rachlin, 1990; Walker, 1989; quoted from Young, 1999a), most of them apply the concept of addiction to certain types of problematic behaviors because the symptoms in both cases are similar. These non-substance types of addiction are classified as behavior-oriented addictions. There have been many studies on behavior-oriented addictions including eating disorders (Lacey, 1993), pathological gambling (Mabilia, 1993), video game addiction (Keepers, 1990), computer addiction (Young, 1999b), television addiction (Park, 1998), and shopping addiction (Song, 1993).

Among the various behavior-oriented addictions, addictive consumption draws special attention from consumer studies. For instance, one study on shopping addiction was performed to focus mainly on inner-personal factors. Song (1993) found that shopping addiction is related positively with inner-emptiness and negatively with self-esteem. Economic approaches to consumer studies have dealt with the matter of addictive consumption based on the rational addiction model by Becker and Murphy (1988). Also Lee (1998) introduced the stress variable as sociopsychological characteristic to tobacco addictive consumption. However, although internet addiction among adolescent consumers has become a problem in Korean society, consumer studies on this topic have not been forthcoming.

### 2. Internet addiction

Even though it does not appear in the most recent version of the Diagnostic and Statistical

Manual of Mental Disorders (DSM-IV, American Psychiatric Association, 1995; quoted from Young, 1996), many researchers have reported on internet addiction as a behavior-oriented addiction. Most researchers would agree that internet addiction can be defined as a mental and physical dependence on internet use. More specifically, it means a condition that involves withdrawal, tolerance, and preoccupation with the internet. Moreover, there will be self-recognition of these symptoms and others will have expressed anxiety related to them.

Young (1998), who sparked the study of internet addiction, claims that the term addiction can be applied to internet usage because the symptoms of internet addiction have the same characteristics as those of tobacco and alcohol addiction. She introduced the measurement of internet addiction which consists of 20 questions on a 5 Likert scale, and many researchers who have performed recent studies on internet addiction refer to Young's internet addiction measurement (Suh, 2001). Consequently, the notion of internet addiction has now been used so widely that it is accepted by most clinicians and academicians (Ha, 2000).

Recent studies on Internet addiction mainly focus on three factors to help define and explain internet addiction: personal, social and internet-related. Firstly, personal factors such as low self-efficacy (Song, 1999), introspective characteristics and impulsive behaviors (Yun, 1998), and the lack of communication skills (Park, 2001) are reported to make consumers more prone to internet addiction. Secondly, social factors such as weak family support may create an atmosphere which is conducive to internet addiction (An, 2000). Additionally, it should be noted that the combination of sociopsychological factors derived from inter-relationships between the individual and the family as well as personal factors can contribute to internet addiction. Thirdly, internet-related factors such as longer internet usage time, easier internet access, and superior internet skills (Lee *et al.*, 2001) can lead to addiction.

### **3. Alienation**

Alienation is the sense of self-estrangement as a human being, it is a psychological experience perceived by individuals under a specific social structure (Park, 1996). Karl Marx

developed the philosophical notion of alienation, but his application of the term had some limitations as he was concerned mainly with the status of the laborer. One hundred years later, Fromm (1955) reconstructed the concept and developed the alienation theory. Fromm contributed greatly to the generalization and popularization of the alienation theory in the diagnosis of post-capitalistic society. One aspect of alienation, he argued, was the concept of consumption hunger, meaning an impulse to purchase products in response to the overexposure to advertisements in the post-capitalist society.

Seeman (1959) brought the discussion about alienation from philosophy to the social sciences and he introduced quantitative research to measure the degree of alienation. He defined *alienation* as the discrepancy between personal expectation and reward in the context of modern society. His concrete notion of alienation consists of six dimensions: powerlessness, meaninglessness, normlessness, social isolation, cultural alienation, and self-isolation. However, the ambiguous range of each dimension made it difficult to validate the differences between the dimensions exclusively and comprehensively (Kang, 2000). Forty years later, Dean took on the task of eliminating this ambiguousness. Dean's alienation scale (1961; quoted from Moon, 2000), a modification of Seeman's, is frequently used in the field of Education and Family Studies. Dean redefined alienation as three measurable sub-dimensions: powerlessness, normlessness, and social isolation.

Though many researchers have shown that problematic behavior is linked to alienation (Kim, 1990), there are few studies on the relationship between internet addiction and alienation. It has been mentioned that individuals become addicted to something in order to compensate for an emotional disturbance in which the user lacks self-control and independence (Hill, 2000*tr.*). There are also some studies on relationships between internet addiction and self-esteem, self-efficacy, and the feeling of isolation. In fact, self-esteem has been an important variable for the addiction study in psychiatry (Marlatt *et al.*, 1988; quoted from Hill *et al.*, 2000*tr.*). It is reported that internet addicts as a group had low self-esteem at statistically significant levels (Kim, 1999; Kim; 2000). In addition, Song (1999) has reported on low self-efficacy and its influence on internet addiction, and Kang (1999) has reported that the more loneliness and social anxiety an individual PC user feels, the more addicted he or she will become to PC communication. These studies, though few in number, do suggest

that alienation is an important concept for understanding problematic behavior as it relates to internet addiction.

#### **4. Personality**

Personality generally refers to the unique characteristics of a person. Kang (1997; quoted from Seong, 1999) has pointed out the partial relationship between psychological characteristics and the use of PC communication services. According to the study, PC service consumers with *introvert* personalities used chat/discussion and trading services more frequently than ones with *extrovert* personalities, while consumers with *emotional* personalities used e-mail and professional database services more than ones with *thinking* personalities.

### **III. RESEARCH PROBLEMS**

This study, as mentioned in the introduction, aims (a) to investigate the respondents' tendency toward internet addiction and alienation; (b) to demonstrate the variance of internet addiction tendency by alienation, personality, and demographic factors; (c) to examine the relative influence of individual factors on internet addiction; and finally, (d) to observe the characteristics of internet usage behaviors clustered by internet addiction tendencies.

The paper pays close attention to the variable of alienation as a sociopsychological one in explaining internet addiction. Until now, most of the findings on internet addiction, if any, were mainly concerned with demographical and inner-personal factors. However, measuring only individual factors encourages some limitations as it may underestimate the influence of social structure, which originally may have caused the psychological characteristics in the first place. In this regard, this paper focuses on the variable that can encompass sociopsychological factors.

## IV. METHODS

### 1. Participants

Since the purpose of this study is to analyze the effective factors in internet addiction, the survey was given to internet users. The authors selected internet users in the Seoul metropolitan area who used the internet at least once in a week. The age range of subjects was from 15 to 39 years old. The number of respondents was distributed as shown in <Table 1>.

Before distributing the main survey, the authors performed an off-line pilot study with 50 respondents to check the reliability and validity of the questionnaire instrument, from August 20 to August 31, 2001. The main survey was then performed with a randomly chosen Internet Panel of Nara Research Inc., using a web-based questionnaire from September 4 to 7, 2001. Results yielded a total of 600 responses with 557 valid responses. These responses were analyzed using factor analysis, frequency counts, percentages, means, standard deviations, variance analysis, cross-tabulation, and multiple-regression analysis.

<Table 1> Demographic characteristics of the respondents

| Variables          |                              | N (%)      | Variables                 |                     | N (%)      |
|--------------------|------------------------------|------------|---------------------------|---------------------|------------|
| Gender             | Male                         | 309 (55.5) | Marital status            | Single              | 371 (66.6) |
|                    | Female                       | 248 (44.5) |                           | Married             | 186 (33.4) |
| Age                | 15~19                        | 128 (23.0) | Job                       | Office-worker       | 313 (56.2) |
|                    | 20~29                        | 201 (36.1) |                           | High school student | 109 (19.6) |
|                    | 30~39                        | 228 (40.9) |                           | College student     | 78 (14.0)  |
| Housewife          |                              |            |                           | 57 (10.2)           |            |
| Level of education | High school graduate or less | 171 (30.7) | Perceived living standard | Over upper-middle   | 124 (22.3) |
|                    | College graduate or less     | 345 (61.9) |                           | Middle              | 196 (35.2) |
|                    | Graduate or more             | 41 ( 7.4)  |                           | Under Lower-middle  | 237 (42.5) |
|                    |                              |            |                           | Total               | 557 (100)  |

## 2. Measures

### 1) Internet addiction tendency

The study modified Young's (1998) internet addiction scale to make it more relevant to the Korean situation. Finally, fifteen questions on a 5 point Likert scale were used to measure internet addiction. The reliability coefficient for this measure was relatively high (cronbach alpha = 0.92). For the analysis, the sum of responses to each question was converted from 0 to 100 points and the respondents were classified in three sub-groups based on the preexisting studies: normal internet user (from 0 to 49), lightly internet-addicted group (from 50 to 79), and seriously internet-addicted group (from 80 to 100).

### 2) Alienation

Using a 5 point Likert scale, the alienation scale, as referred by DAS (Dean's Alienation Scales), consists of three dimensions by: powerlessness, normlessness, and sense of isolation. The reliability coefficients for this measure (and the number of questions) are as follows: powerlessness, 0.83 (8 questions), normlessness, 0.62 (4 questions), and sense of isolation, 0.86 (8 questions).

### 3) Personality

This study modified the MBTI (Mayers-Briggs Type Indicator), which has four directions of personality. The MBTI scale originated with Jung and it classifies personality as introvert/extrovert and thinking/feeling (Briggs *et al.*, 1999tr.). In this study, the researchers classified personality by summarizing the answers to five binary type questions each for introvert (vs. extrovert) and feeling-oriented (vs. thinking-oriented) tendency. The chosen number of introvert and feeling-oriented examples were then added and converted to a six-point personality scale, from 0 to 5.



## V. RESULTS

### 1. General tendency of internet addiction and alienation

#### 1) Internet addiction

It is noted that 3.1% of the respondents are seriously addicted to the internet and 26% are lightly addicted to the internet. As <Table 2> shows, internet addiction is clearly distinguishable by age groups. The teenagers' (age 15-19) tendency of internet addiction is more serious (40% light and 7% serious) than the average tendency (about 30%). This implies that internet addiction may become a serious social problem as these teenagers grow up to enter the work force and raise families.

#### 2) Alienation

The mean score of alienation was 2.32 out of 5 points. Looking at variances by demographic groups, we can note statistically significant differences between the groups as <Table 3> summarizes. The single group and high school students (or teenagers) showed a relatively high degree of alienation. This could be caused mainly by the stresses of the Korean education system which emphasizes entrance exams to the university, as well as by the cumulative anxiety of adolescence itself (Lee, J. Y., 1998). Additionally, those who perceived their living standard as under lower-middle felt a relatively high degree of alienation.

<Table 2> Internet addiction tendency

| Variable                    | Group          | N (%)      | M     | SD    | Age N (%) |            |            | $\chi^2$ |
|-----------------------------|----------------|------------|-------|-------|-----------|------------|------------|----------|
|                             |                |            |       |       | 15~19     | 20~29      | 30~39      |          |
| Internet addiction tendency | Normal user    | 386 (69.3) | 29.65 | 12.11 | 68 (53.1) | 142 (70.6) | 176 (77.2) | 26.69*** |
|                             | Light addict   | 154 (27.6) | 59.26 | 6.94  | 51 (39.8) | 56 (27.9)  | 47 (20.6)  |          |
|                             | Serious addict | 17 ( 3.1)  | 88.92 | 7.35  | 9 ( 7.0)  | 3 ( 1.5)   | 5 ( 2.2)   |          |
| Total                       |                | 557 (100)  | 39.65 | 19.14 | 128 (100) | 210 (100)  | 228 (100)  |          |

\*\*\* p < .001, \*\* p < .01, \* p < .05

&lt;Table 3&gt; Alienation variances by demographic factors

| Variables (N)                   |                                    | Alienation | Power<br>-lessness | Normless<br>-ness | Isolation |
|---------------------------------|------------------------------------|------------|--------------------|-------------------|-----------|
| Gender                          | Male (309)                         | 2.33       | 2.31               | 2.62              | 2.20      |
|                                 | Female (248)                       | 2.32       | 2.38               | 2.65              | 2.09      |
|                                 | T-test                             | 0.16       | -1.12              | -0.56             | 1.66      |
| Marital status                  | Single (371)                       | 2.39       | 2.42               | 2.70              | 2.20      |
|                                 | Married (186)                      | 2.20       | 2.19               | 2.51              | 2.05      |
|                                 | T-test                             | 3.41**     | 3.65***            | 3.06**            | 2.26*     |
| Age                             | 15~19 (128)                        | 2.52       | 2.59               | 2.87              | 2.29      |
|                                 | 20~29 (201)                        | 2.34       | 2.34               | 2.67              | 2.17      |
|                                 | 30~39 (228)                        | 2.20       | 2.20               | 2.48              | 2.06      |
|                                 | F                                  | 11.826***  | 13.149***          | 15.298***         | 3.918*    |
| Level of<br>education           | High school graduate or less (171) | 2.45       | 2.51               | 2.75              | 2.23      |
|                                 | College graduate or less (345)     | 2.26       | 2.26               | 2.58              | 2.10      |
|                                 | Graduate or more (41)              | 2.32       | 2.32               | 2.56              | 2.21      |
|                                 | F                                  | 5.296**    | 7.269**            | 4.057*            | 2.031     |
| Job                             | Worker (313)                       | 2.26       | 2.28               | 2.54              | 2.11      |
|                                 | High school student (109)          | 2.56       | 2.63               | 2.89              | 2.33      |
|                                 | College student (78)               | 2.36       | 2.33               | 2.79              | 2.17      |
|                                 | Housewife (57)                     | 2.17       | 2.16               | 2.46              | 2.02      |
|                                 | F                                  | 7.879***   | 8.279***           | 10.860***         | 3.012*    |
| Perceived<br>living<br>standard | Over higher-middle (124)           | 2.26       | 2.29               | 2.68              | 2.03      |
|                                 | Middle (196)                       | 2.24       | 2.23               | 2.59              | 2.07      |
|                                 | Under lower-middle (237)           | 2.42       | 2.46               | 2.64              | 2.28      |
|                                 | F                                  | 5.653**    | 6.201**            | 0.780             | 6.432**   |
| Total                           |                                    | 2.32       | 2.34               | 2.63              | 2.15      |

\*\*\* p &lt; .001, \*\* p &lt; .01, \* p &lt; .05

## 2. Variances of internet addiction by related factors

### 1) Alienation and internet addiction

It is noticeable that the variance of internet addiction is closely related to alienation. When divided by three groups (high-middle-low), the variable alienation showed a striking

<Table 4> Internet addiction by alienation

| Variables     | N   | M     | Duncan | F             | Variables    | N   | M     | Duncan | F             |
|---------------|-----|-------|--------|---------------|--------------|-----|-------|--------|---------------|
| Alienation    |     |       |        |               | Normlessness |     |       |        |               |
| Low           | 479 | 36.69 | A      | 49.670<br>*** | Low          | 372 | 35.51 | A      | 37.983<br>*** |
| Middle        | 71  | 56.66 | B      |               | Middle       | 161 | 45.86 | B      |               |
| High          | 7   | 69.52 | C      |               | High         | 24  | 62.01 | C      |               |
| Powerlessness |     |       |        |               | Isolation    |     |       |        |               |
| Low           | 447 | 36.00 | A      | 50.728<br>*** | Low          | 474 | 37.03 | A      | 34.734<br>*** |
| Middle        | 96  | 53.12 | B      |               | Middle       | 72  | 53.35 | B      |               |
| High          | 14  | 63.80 | C      |               | High         | 11  | 62.87 | C      |               |

\*\*\* p < .001, \*\* p < .01, \* p < .05

association with internet addiction. The association also appears in the dimension of alienation. The sense of powerlessness, normlessness, and isolation are all closely related to internet addiction as <Table 4> shows. This result supports prior research which has reported that alienation is related to problematic behavior and, especially, to internet addiction.

## 2) Demographic factors and internet addiction

The tendency of internet addiction was relatively higher in the following groups: single, high school students, and perceived living standard under lower-middle as shown in <Table 6>.

<Table 5> Internet addiction tendency by personality

| Variable  |        | N   | M     | Duncan | F           | Variable             |        | N   | M     | Duncan | F      |
|-----------|--------|-----|-------|--------|-------------|----------------------|--------|-----|-------|--------|--------|
| Introvert | Low    | 175 | 36.71 | A      | 4.705<br>** | Feeling<br>-oriented | Low    | 167 | 36.60 | A      | 3.916* |
|           | Middle | 209 | 39.38 | A B    |             |                      | Middle | 230 | 39.89 | A B    |        |
|           | High   | 173 | 42.94 | B      |             |                      | High   | 160 | 42.47 | B      |        |

\*\*\* p < .001, \*\* p < .01, \* p < .05

&lt;Table 6&gt; Internet addiction tendency by demographic factors

| Variables                 |                              | N   | M     | T-test  |           |
|---------------------------|------------------------------|-----|-------|---------|-----------|
| Gender                    | Male                         | 309 | 40.05 | 0.55    |           |
|                           | Female                       | 248 | 39.15 |         |           |
| Marital status            | Single                       | 371 | 41.95 | 4.07*** |           |
|                           | Married                      | 186 | 35.05 |         |           |
| Variables                 |                              | N   | M     | Duncan  | F         |
| Age                       | 15~19                        | 128 | 49.62 | A       | 27.736*** |
|                           | 20~29                        | 201 | 38.99 | B       |           |
|                           | 30~39                        | 228 | 34.63 | C       |           |
| Level of education        | High school graduate or less | 171 | 45.36 | A       | 12.467*** |
|                           | College graduate or less     | 345 | 36.64 | B       |           |
|                           | Graduate or more             | 41  | 41.13 | A B     |           |
| Job                       | Office-worker                | 313 | 36.00 | A       | 18.584*** |
|                           | High school student          | 109 | 51.00 | B       |           |
|                           | College student              | 78  | 40.36 | A       |           |
|                           | Housewife                    | 57  | 37.01 | A       |           |
| Perceived living standard | Over higher-middle           | 124 | 40.92 | A       | 3.336*    |
|                           | Middle                       | 196 | 36.82 | B       |           |
|                           | Under lower-middle           | 237 | 41.32 | A       |           |

\*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$

### 3. Relative influence of related factors to internet addiction

The researchers involved in this study also used multiple regression analysis to identify the relative influence of related factors to internet addiction(<Table 7>). As discussed previously, the alienation factors and the job described as “high-school student” are the most decisive for anticipating internet addiction. The most critical factor regarding internet addiction is powerlessness.

On the other hand, age was not a statistically significant factor for internet addiction even though teenagers were more likely to use the internet and to become more addicted to it. This is because the effect of the variable age was controlled when it was considered along with the variable job title “high school student.” With these results, we can assume a high

&lt;Table 7&gt; Relative influence of related variables on internet addiction (N=557)

| Dependent variable        |                      | Independent variables                | B                                | $\beta$ |
|---------------------------|----------------------|--------------------------------------|----------------------------------|---------|
| Alienation                |                      | Powerlessness                        | 7.83                             | .289*** |
|                           |                      | Normlessness                         | 4.36                             | .151*** |
|                           |                      | Sense of isolation                   | 4.29                             | .143**  |
| Personality               |                      | Introvert                            | .199                             | .017    |
|                           |                      | Feeling-oriented                     | .475                             | .038    |
| Demographic factors       |                      | Age                                  | -.006                            | -.023   |
|                           | Gender               | Male=1                               | 3.85                             | .100*   |
|                           | Marital status       | Single=1                             | -1.56                            | -.039   |
|                           | Level of education   | High school graduation or less=1     | -1.20                            | -.029   |
|                           |                      | Graduate school graduation or more=1 | 4.12                             | .056    |
|                           | Job                  | Office-worker=1                      | -1.97                            | -.051   |
|                           |                      | High school student=1                | 8.48                             | .176*   |
|                           |                      | Housewife=1                          | 4.65                             | .074    |
| Perceived living standard | Over lower-middle=1  | 2.49                                 | .054                             |         |
|                           | Under lower-middle=1 | 1.14                                 | .030                             |         |
| Constants                 |                      | -3.019                               | F 21.965***                      |         |
| R <sup>2</sup>            |                      | .379                                 | Standardized R <sup>2</sup> .361 |         |

\*\*\* p < .001, \*\* p < .01, \* p < .05

school boy is more likely to be internet-addictive when he feels powerless in his school system and/or daily life.

#### 4. Internet usage characteristics by internet addiction tendency

Will serious addicts be different from normal internet users? If so, what are the differences in using the internet? <Table 8> summarizes internet usage characteristics by internet addiction tendency. Serious internet-addicts connect to the internet more often at home than normal users and they use the internet at any time of the day compared to the normal user who connects to the internet predominantly in the evening. Serious internet-addicts often visit movie/music/cartoon sites, community sites, game sites, chat rooms and the Warez site, while normal users connect to news/broadcasting, shopping/reservation,

&lt;Table 8&gt; Characteristics of internet usages by internet addiction tendency (N, %)

| Variables                                |                       | Internet addiction tendency |              |                | Total      |
|--|-----------------------|-----------------------------|--------------|----------------|------------|
|  |                       | Normal user                 | Light addict | Serious addict |            |
| Time of internet use                     | Morning/daytime       | 112 (29.0)                  | 26 (16.9)    | 0 (0)          | 138 (24.8) |
|  | Evening/night/dawn    | 143 (37.0)                  | 78 (50.6)    | 7(41.2)        | 228 (40.9) |
|  | Random                | 131 (33.9)                  | 50 (32.5)    | 10 (58.8)      | 191 (34.3) |
| $\chi^2 = 19.008^{**}$                   |                       |                             |              |                |            |
| Main internet connecting place           | School/company        | 165 (42.7)                  | 40 (26.0)    | 3 (17.6)       | 208 (37.3) |
|  | Home                  | 206 (53.4)                  | 108 (70.1)   | 13 (76.5)      | 327 (58.7) |
|  | PC room/Other place   | 15 (3.9)                    | 6 (3.9)      | 1 (5.9)        | 22 (3.9)   |
| $\chi^2 = 16.491^{**}$                   |                       |                             |              |                |            |
| Main surfing websites (Multiple choices) | E-mail/E-card         | 326 (84.5)                  | 128 (83.1)   | 14(82.4)       | 468 (84.0) |
|  | News/broadcasting     | 217 (56.2)                  | 69 (44.8)    | 9(52.9)        | 295 (53.0) |
|  | Movie/music/cartoon   | 180 (46.6)                  | 91 (59.1)    | 12(70.6)       | 283 (50.8) |
|  | Game                  | 159 (41.2)                  | 72 (46.8)    | 9(52.9)        | 240 (43.1) |
|  | Community             | 144 (37.3)                  | 79 (51.3)    | 10(58.8)       | 233 (41.8) |
|  | Shopping/reservations | 167 (43.3)                  | 62 (40.3)    | 4 (23.5)       | 233 (41.8) |
|  | Education/academic    | 155 (40.2)                  | 42 (27.3)    | 5 (29.4)       | 202 (36.3) |
|  | Chatting              | 78 (20.2)                   | 49 (31.8)    | 8 (47.1)       | 135 (24.2) |
|  | Warez Site            | 77 (19.9)                   | 46 (29.9)    | 6 (35.3)       | 129 (23.2) |
|  | Economy/practical     | 78 (20.2)                   | 30 (19.5)    | 1 (5.9)        | 109 (19.6) |
|  | Internet broadcasting | 42 (10.9)                   | 30 (19.5)    | 2 (11.8)       | 74 (13.3)  |
|  | Cyber trading         | 47 (12.2)                   | 20 (13.0)    | 2 (11.8)       | 69 (12.4)  |
|  | Adult only service    | 18 (4.7)                    | 17 (11.0)    | 2 (11.8)       | 37 (6.6)   |
|  | Cyber gambling        | 8 (2.1)                     | 1 (0.6)      | 1 (5.9)        | 10 (1.8)   |
|  | Other sites           | 10 (2.6)                    | 3 (1.9)      | 0 (0)          | 13 (2.3)   |
| Total                                    |                       | 386 (100)                   | 154 (100)    | 17 (100)       | 557 (100)  |

\*\*\* p &lt; .001, \*\* p &lt; .01, \* p &lt; .05

and education/academic sites. In sum, serious internet-addicts users are more likely to use the internet purposelessly in a closed place.

As <Table 9> shows, it is notable that serious internet addicts use the internet about 7 hours a day (416 minutes), while the average internet users use the internet about 4 hours (238 minutes) a day. The degree of obsession to cyber money was also differentiated by

&lt;Table 9&gt; Average time of internet use by internet addiction tendency

| Variable                          |                | N   | Mean time(minute) | Duncan | F         |
|-----------------------------------|----------------|-----|-------------------|--------|-----------|
| Internet<br>addiction<br>tendency | Normal user    | 386 | 223.36            | A      | 12.679*** |
|                                   | Light addict   | 154 | 257.72            | A      |           |
|                                   | Serious addict | 17  | 416.47            | B      |           |
| Total                             |                | 557 | 238.76            |        |           |

\*\*\* p < .001, \*\* p < .01, \* p < .05

&lt;Table 10&gt; Degree of obsession to cyber money by internet addiction tendency

| Variable                          |                | N   | Obsession | Duncan | F         |
|-----------------------------------|----------------|-----|-----------|--------|-----------|
| Internet<br>addiction<br>tendency | Normal user    | 386 | 1.52      | A      | 12.679*** |
|                                   | Light addict   | 154 | 2.34      | B      |           |
|                                   | Serious addict | 17  | 2.82      | C      |           |
| Total                             |                | 557 | 1.79      |        |           |

\*\*\* p < .001, \*\* p < .01, \* p < .05

internet addiction tendency (see <Table 10>). Serious addicts were more obsessed with cyber money than normal users. This implies that they regard virtual reality to be as important as real life.

## VI. DISCUSSION

Addiction destroys human beings and their relationships. Internet addiction is no exception. The paper has discussed and demonstrated the status and factors relating to internet addiction. Our purpose is to find methods and opportunities to stop the growth of internet addiction.

One of the most important findings of this study is that internet addiction is closely related to personal factors as well as the sense of alienation measured by powerlessness, normlessness, and isolation. The sense of alienation is not a genuine personal factor *per se*

but a sociopsychological problem. In other words, alienation is a feeling that one experiences through interaction with the *outer world*-our society. Therefore, alienated consumers are compelled to resolve their anxiety through distorted behaviors, such as internet-addictive consumption.

As the degree of internet addiction is especially high among users aged fifteen to nineteen, it is necessary to develop some remedies to lessen the phenomenon. First of all, we need to develop effective consumer education programs to induce teenagers to use the internet correctly; these programs can be offered on-line and off-line, in school, and at home. Even though our compulsory education system does not offer consumer studies courses, there are some alternative ways to teach students proper internet use during their study of home economics and ethics. A family consumer program for using the internet correctly could also be made available. A family program could be of great importance as the major internet usage place for addicts is the home. Additionally, Tapscott (1998) indicates that sound internet use within the family would probably improve the communication and interaction between family members. If the family does not know how to use the internet properly, communication within the family can be obstructed. In the long run, it is necessary to lessen the burden on high-school students by reducing their sense of alienation and teaching them that internet use can actually increase these feelings.

This study has delved into a very special kind of addictive consumption behavior and considers the sociopsychological variable of alienation through a quantitative survey analysis. This model could contribute to the knowledge base of consumer studies by explaining addictive behavior through social-individual interaction, not solely by personal traits. But there remain opportunities for further studies. The authors suggest qualitative study-especially in-depth interviews with addicts. This will help identifying other underlying factors of addiction. The authors express the hope that the problem of internet addiction may be reduced through relevant policies and programs based on subsequent studies.



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