

SNS상에서 사이버불링 피해경험: 자기노출, 강박적 인터넷 사용 그리고 우울한 상태 중심으로

Cyberbullying Victimization Experience on SNSs: Focusing on Self-disclosure, Compulsive Internet Use, and Depressive Status

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요 약

사람들, 특히 젊은 사람들이 SNS(사회관계망 사이트)를 매일 사용함에 따라 사이버불링은 점차 더 중요한 문제가 되었다. 본 연구는 SNS상에서 사이버불링 피해 경험에 영향을 미치는 요인을 한국과 오스트리아에서 조사하고 그 결과를 비교한다. 특히 본 연구는 SNS 사용자의 자기노출 패턴, 강박적 인터넷 사용 그리고 우울한 상태의 정도가 글-언어, 시각적, 왕따, 위장이라는 네 가지 형태의 사이버불링 피해 경험에 어떻게 영향을 미치는가 하는 것에 주목하였다. 이에 따라 한국과 오스트리아에서 510명의 SNS 사용자를 대상으로 조사를 하였고, 그 결과 SNS 사용자의 자기 노출 패턴, 강박적 인터넷 사용 및 우울한 상태의 정도가 위에 열거한 사이버불링의 피해 경험에 영향을 미치는 것으로 나타났다.

한편, 한국과 오스트리아 SNS 사용자들 사이에서는 차이도 있었다. 즉, 한국에서는 프로필에 관한 정보를 자주 바꾸는 것이 위에 열거한 네 가지 형태의 사이버불링 피해 경험에 영향을 미치는 것으로 나타났지만 오스트리아에서는 네 가지 형태 모두가 아닌, 시각적 사이버불링 피해 경험에만 영향을 미치는 것으로 나타났다. 또, 한국에서는 우울한 상태의 정도가 글-언어 사이버불링 피해 경험에만 영향을 미쳤지만 오스트리아에서는 반대로 네 가지 형태의 사이버불링 피해 경험에 모두 영향을 미쳤다.

키워드 : 사이버 불링, 사회관계망 서비스, 자기노출, 일상활동이론, 강박적 인터넷 사용, 우울한 상태

I. Introduction

Since Sixdegree.com, which was the first Social Networking Site (SNS), was launched in 1997, various Social Networking Sites (SNSs) have emerged, such as Facebook, Twitter, Instagram, etc. Those platforms

have attracted a large number of users (Boyd and Ellison, 2007). For instance, Facebook, one of the largest SNS platforms, had 2.9 billion monthly active users worldwide for the third quarter of 2021 (Dixon, 2023). Moreover, global SNS users reach 4.9 billion, which is 60.5% of the world population (Shewale,

2023). Furthermore, the environment of SNS usage has expanded. With the development of mobile devices, people can access to SNSs anytime and anywhere as long as there is the Internet network. Thus, more people are accessing to SNSs through not only computers, but also mobile devices such as smartphones and tablets.

SNSs providers encourage users to create their content by sharing their interests, political opinions, and activities with other users (Boyd, 2008). SNSs provide many benefits that users can enjoy. For example, some people use SNSs for fun, as a mean of releasing stresses by updating their daily lives and by reading those of others (Liu *et al.*, 2016). To enjoy these benefits, individuals create their own accounts on SNSs by disclosing their information. For instance, a person has to insert his/her name, gender, and profile picture to distinguish him-/herself from others when (s)he creates an account on Facebook. After (s)he creating it, (s)he can follow friends, upload content, and click “like” to make and maintain relationships with other users. This procedure is called self-disclosure on SNSs. To use SNSs, self-disclosure is necessary even though how much disclose oneself depends on each user (Chung *et al.*, 2012). This self-disclosure on SNSs brings not only benefits but also costs. Scholars have highlighted identity theft and privacy intrusion as negative consequences of self-disclosure when using SNSs (Erdur-Baker, 2010; Slonje and Smith, 2008). The costs of using SNSs includes the mentioned efforts to create and maintain an account and negative consequences. While there are various negative consequences of self-disclosure, this paper focuses the relationships between self-disclosure and different types of cyberbullying victimization experiences (written-verbal, visual, exclusion, and impersonation). This self-disclosed information on SNSs can be unfortunately used by some people who are motivated to commit crimes. Those

motivated people can be strangers, acquaintances, or friends of a self-disclosed information owner. A maliciously motivated person can explore content on SNSs to find a target for a crime. For example, those people can join in an Internet café for depressed people and explore posts that members have uploaded to target a vulnerable person. If there are a lot of self-disclosed information that reveal a person in detail including psychological status, a motivated offender can target and verbally and visually victimize this person on SNSs.

Cyberbullying, an aggression involving electronic devices, has become a serious cybercrime nowadays (Kim *et al.*, 2021). Due to the emergence of cyberbullying, the number of face-to-face school bullying cases has been decreased in a few years, while the number of cyberbullying cases has been increased in Korea: the experience of cyberbullying is 16.2 percent and the experience of being cyberbullied is 16.8 percent (Yang, 2018). Moreover, approximately 20 percent to 40 percent of respondents have been bullied online (Smith, 2012; Tokunaga, 2010). In addition, 9 out of 10 young people have witnessed cyberbullying incidents on SNSs in the UK and approximately 34 percent of 457 students in the United States have been cyberbullying or cyberbullied (Kang, 2011; Patchin and Hinduja, 2006). As seen above, the number of cyberbullying cases has increased, but there is a still paucity to investigate factors affecting cyberbullying victimization experiences. Due to the fact that a lot of cyberbullying incidents happen on SNSs (Whittaker and Kowalski, 2015), it is needed to identify how self-disclosure, as an essential behavior of using SNSs, is related to different types of cyberbullying victimization experiences.

Furthermore, we adopt Routine Activity Theory (RAT), which is one of the main theoretical backgrounds explaining various crimes, including cyber-crime (Bossler and Holt, 2009; Leukfeldt and Yar,

2016; Reyns *et al.*, 2011; Yar, 2005). RAT states that three core elements (i.e., motivated offenders, suitable targets, and the absence of capable guardians) affect that a person committing a crime in the convergence of time and space (Cohen and Felson, 2016).

Among these elements, we focus on guardianship that can encourage or discourage a potential offender to commit a crime (Reyns *et al.*, 2016). The reason we focus on guardianship is that guardianship as a facilitator can provide conditions for a motivated offender to commit a crime or not. Thus, guardianship can be a key determinant of cyber victimization (Choi, 2008). Specifically, related to self-disclosure, one's online exposure as a guardianship is identified to be related to online victimization based on RAT (Guerra and Ingram, 2022). Other two elements (motivated offenders and suitable targets) are also important, but it requires different approaches and collaborations with other fields such as psychology, sociology, and criminology to deeply investigate these elements. Through this research, we will emphasize and open an avenue to study the guardianship of self-disclosure related to cyberbullying victimization experiences when people use SNSs.

We include self-disclosure, compulsive Internet use, and depressive status as guardianship. First, self-disclosure consists of the frequencies of updating one's own profile-setting, posting on one's own SNSs, and posting on others' SNSs. Second, compulsive Internet use has become an issue for many people especially for young people (Gómez-Guadix *et al.*, 2012). For example, adolescents who spend a lot of time using SNSs and Internet are likely to be targeted for online harassment (Leung and Lee, 2012). Third, we adopt depressive status as a factor affecting being cyberbullied because a depressive person can suffer additional stress, which can be spotted and targeted for harassment by a motivated offender. The relationship between depres-

sion and being bullied in offline (in real life) is bidirectional (Gómez-Guadix *et al.*, 2012). It is therefore necessary to investigate how depressive status is related to different types of cyberbullying victimization experiences. Fourth, we adopt four different types of cyberbullying victimization experiences (written-verbal, visual, exclusion, and impersonation) as dependent variables (Nocentini *et al.*, 2010). Each point will be explained in the following section <2 Theoretical background and hypotheses>.

The absence of capable guardians refers that there is not enough guardianship that discourage a motivated offender from committing a crime. For example, a pickpocket considers a drunken person as an easy target, because the drunken person is less aware of surroundings to protect his/herself. There is nothing wrong with the drunken status itself. The issue is that a motivated offender takes advantage of the drunken status of someone. Thus, the drunken status is the absence of capable guardianship in this case. In the same vein, if a person frequently discloses her/himself in detail on SNSs, uses Internet beyond her/his control, and is on depressive status, her/his capable guardianship can possibly decrease. Consequently, (s)he can be exposed to cyberbullying victimization. This is what we will investigate how self-disclosure, compulsive Internet use, and depressive status as guardianship are related to the four types of cyberbullying victimization experiences.

The relations between the antecedents (one's pattern related to self-disclosure on SNSs, compulsive Internet use, and depressive status) and four types of cyberbullying victimization experiences can be different by region. Cyberbullying has been studied within a country (e.g., China (Li, 2006), or a continent, for instance, Europe (Menesini and Nocentini, 2009; Nocentini *et al.*, 2010). However, it is necessary to compare cyberbullying victimization experiences in two culturally different

regions, because these cultural differences can help to find a appropriate way to decrease cyberbullying incidents for a particular region. As an exploratory study, we select Korea in Asia and Austria in Europe as sample counties for two regions. According to Hofstede, Korea has a different culture from that of Austria; Korea has greater power distance, uncertainty avoidance, long-term orientation, and lower individualism, and indulgence than Austria (Hofstede Insights, 2018). As shown, Korea and Austria have different cultures, comparing factors affecting cyberbullying victimization experiences in the two countries provides a new perspective to study cyberbullying victimization experiences.

This study includes six parts. After 1) Introduction, we will present 2) Theoretical Background and Hypotheses that include Routine Activity Theory (RAT), Cyberbullying, Cyberbullying based on RAT, Self-disclosure on SNSs, Compulsive Internet Use, Depression. Then, 3) Method and 4) Empirical Analysis will be explained. Finally, we will offer 5) Discussion and 6) Contributions and Conclusions.

II. Theoretical Background and Hypotheses

2.1 Routine Activity Theory (RAT)

Cohen and Felson (1979), who first presented Routine Activity Theory (RAT), analyzed crime trends and cycles of non-negligent crimes such as homicides, aggravated assaults, robberies, and burglaries in the US from 1947 to 1974. Through the analyses of these crime rates and cycles, they found that crimes were not just related to social causes such as poverty, inequality, and unemployment that people had expected. Rather, they found that crimes stemmed from new opportunities related to social changes. For example,

after the Second World War, Western countries' economic conditions improved and these countries expanded their welfare programs. However, during this time, crime rates rose, because of social prosperity (Cohen and Felson, 1979). It meant that the invention of an automobile allowed thieves to move more quickly and freely to look for targets (Cohen and Felson, 2016).

Most crimes occur when three elements converge in time and space: a motivated offender, a suitable target, and the absence of a capable guardian (Cohen and Felson, 2016). "Motivated offender" refers not only to a person who has committed a crime but also to a person who is able to commit a crime and who is willing to do so. "Suitable target" is a person or object that offenders regard as vulnerable or controllable. "Guardian" can be a person or an object that discourages a motivated offender from committing a crime. These three elements (the presences of a motivated offender, a vulnerable target, and a lack of guardianship) must converge in time and space to foster atmosphere for a motivated offender to commit a crime. On the other hand, the lack of any one of these elements is enough to decrease the number of crimes (Cohen and Felson, 2016).

Through the development of Internet that have led social changes, an online crime can happen regardless of the convergence of physical time and space because online networks allow motivated offenders and vulnerable targets to interact anywhere and anytime beyond the limitation of physical presence (Eck and Clarke, 2003). Routine Activity Theory (RAT) has been applied to several cybercrimes, such as phishing (Ngo and Paternoster, 2011), malware infection, hacking, identity theft (Reyns, 2013), cyberbullying (Mesch, 2009), etc. For instance, it is identified that one's online exposure is closely related to guardianship and online victimization based on RAT (Guerra and Ingram, 2022).

Based on RAT, cyberbullying can easily occur if

a perpetrator is motivated to attack a target and the target looks vulnerable. This situation satisfies two elements (motivated offender and suitable target) for cyberbullying. The third element, guardianship as a facilitator, creates the level of situation for a motivated offender to commit a crime or not. Therefore, guardianship is a key determinant of cyber victimization (Choi, 2008). For example, digital forms of guardianship (e.g. antivirus programs) reduce a computer victimization risk (Choi, 2008). This finding suggests that if a SNS user increase a level of guardianship, a victimization risk can be decreased. Thus, this study focuses on the element of guardianship related to cyberbullying victimization experience based on RAT.

2.2 Cyberbullying based on RAT (Routine Activity Theory)

The concept of cyberbullying has been expanded from traditional bullying, defined as intentional or repeat aggression by an individual or groups toward a person (Nocentini *et al.*, 2010; Smith, 2009). Traditional bullying usually takes place at school or in public areas such as playgrounds and bus stops. However, the developments of Internet and mobile devices have led to the emergence of a new type of bullying, known as cyberbullying (Patchin and Hinduja, 2006).

According to Smith *et al.* (2006), cyberbullying is categorized into seven subcategories: text message bullying, picture/video clip bullying, phone call bullying, email bullying, chat room bullying, bullying through instant messaging, and bullying via websites (Smith *et al.*, 2006). Willard (2007) also suggested seven types of cyberbullying activities: flaming, harassment, cyberstalking, denigration, impersonation, outing (and trickery), and exclusion based on the type of behavior. After surveying 360 adolescents, Slonje and Peter

(2008) classified cyberbullying based on a medium of occurrence: text message, email, mobile phone, and Internet (Slonje and Smith, 2008). Spears *et al.* (2009) proposed two types of cyberbullying: covert and overt cyberbullying (Spears *et al.*, 2009). These different types of cyberbullying can be overlapped or interrelated to each other.

Though various classifications of cyberbullying, we adopt the categorization from Nocentini *et al.* (2010). Based on Smith *et al.*'s (2006) seven subcategories of cyberbullying, Nocentini *et al.* (2010) conducted a survey to investigate respondents' points of view regarding cyberbullying. Based on the interview with 70 adolescents from three different countries (Germany, Italy, and Spain), they divided cyberbullying into four types: written-verbal (calls and messages through e-mails, chats, blogs, social networking communities, and websites), visual (posting, sending or sharing pictures and videos over Internet apps.), exclusion (purposely excluding someone from an online group), and impersonation (stealing and revealing personal information in order to use another person's name and account) (Nocentini *et al.*, 2010). We adopt these four classifications because they include original seven subcategories and remove a few subcategories that don't fit to the SNS context. For example, phone call bullying was merged into written-verbal cyberbullying. In this research, we study cyberbullying victimization experiences from these four categories: written-verbal, visual, exclusion, and impersonation.

Veenstra (2009) studied several aspects of cyberbullying, including a victim's perspective based on RAT (Routine Activity Theory). If one spends more time on Internet, (s)he tends to be observed and located as a suitable target by a motivated offender (Veenstra, 2009). For example, youths who have profiles on SNSs and who are active in chat rooms have a higher probability of being bullied than those youths who mainly

play online games (Mesch, 2009). Furthermore, users' routine activities on SNSs can be facilitators of being bullied (Arntfield, 2015). The spreading of personal data, photographs, and audio-visual materials on SNSs can enable motivated offenders to acquire personal information about SNS users. Then, these offenders can use the acquired information to evaluate and locate a vulnerable user for cyberbullying (Arntfield, 2015).

These findings suggest that the uses of Internet, the updates of one's profile, the communications with others, and the updates of personal daily life can become routine activities as behavioral patterns, that are factors of being a target for cybercrime including cyberbullying. Users' activities on SNSs can be considered as a guardianship to encourage or discourage motivated offenders to locate a vulnerable target. Thus, we adopt RAT (Routine Activity Theory) to examine cyberbullying, especially from a victim's perspective.

2.3 Factors affecting Cyberbullying Victimization Experiences

Factors affecting cyberbullying victimization experiences will be introduced and relevant hypotheses will be explained in this section.

2.3.1 Self-disclosure on SNSs

2.3.1.1 Self-disclosure through setting and updating profile

Boyd and Ellison (2007) proposed functions of Social Network Site (SNS) as follows: "(1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users whom they share a connection, and (3) view and traverse their lists of connections and those made by others within the system." SNS platforms allow a user to post content. It means that each user becomes a creator on SNSs. Users post their interests, political views, or activities in various

formats (e.g., texts, photos, videos) through tools provided by SNS providers (Boyd and Ellison, 2007).

To upload content on SNSs, an individual need to create an account on each SNS. In this process, a person provides his/her personal information. For example, Facebook requires an individual to enter his/her personal information on a profile setting, such as name, mobile number, e-mail address, relationship status (e.g., single, married, engaged, etc.), profile picture, and others, even though some of them are optional. Although one can create a pseudonym (fictitious name) with fictitious age and gender, (s)he discloses her/himself to others in a certain level in order to distinguish her/him from others for the purpose of networking and maintaining relationships with other users. SNS users can also control who can access to their information in a certain level. For example, Facebook users can share their profiles within friends' level. However, users typically reveal at least some of their personal information, because this information helps users distinguish themselves from others.

Profile setting as the first self-disclosure on SNSs has an important role in networking and extending relationships from offline networks (Boyd, 2008). However, this profile allows motivated offenders to collect and distribute one's personal information. This collected information can be used in various ways such as cyberstalking, identity theft, and blackmail (Grimmelmann, 2009; Palfrey, 2008; Patchin and Hinduja, 2006). SNS users who reveal personal information about themselves in detail are more vulnerable to be cyberbullied than people who do not (Von Marées and Petermann, 2012). Disclosed personal information on a SNS can easily be copied and pasted to other SNSs. Consequently, unspecified majorities can access to this information.

The construct of 'the frequency of changing one's profile' refers to how often a person update his/her

profile. The survey questions are: 1) how often do you update your status (e.g., married, etc.) on your SNS? 2) how often do you update your profile information on your SNS? 3) how often do you change your profile picture on your SNS? These questions can be answered among one of seven options (not at all, very little, a little, neutral, fairly, much, and very much). As mentioned, one's profile setting information can be used by motivated offenders, the higher frequency of changing one's profile can increase cyberbullying victimization experiences. Therefore, we hypothesize that the frequency of changing one's profile is positively related to four types of cyberbullying victimization experiences.

H1a: The frequency of changing one's profile is positively related to the victimization experience of written-verbal cyberbullying.

H1b: The frequency of changing one's profile is positively related to the victimization experience of visual cyberbullying.

H1c: The frequency of changing one's profile is positively related to the victimization experience of exclusion cyberbullying.

H1d: The frequency of changing one's profile is positively related to the victimization experience of impersonation cyberbullying.

2.3.1.2 Self-disclosure through posting on SNSs

After one opens a SNS account, (s)he starts to use it by visiting someone's SNSs and leaving a comment as well as writing and uploading photos and videos of his/her daily life on her/his own SNS (Sengupta and Chaudhuri, 2011). The two of major motivations to use SNSs are social interaction (Whiting and Williams, 2013) and enjoyment (Lin and Lu, 2011).

SNS users who are motivated to make and manage relationships with others may focus on communicating

with others. Meanwhile, people who want to enjoy using SNSs may focus on having fun. In other words, depending on a purpose to use SNSs, an individual can develop different activities on SNSs. These activities based on a distinct motivation can become different behavioral patterns that are possibly related to different types of cyberbullying victimization experiences.

In order to identify these relations, we classify types of SNS uses based on the place where users engage in: posting on one's own SNSs and posting on others' SNSs (Won and Seo, 2017). On the one hand, posting on one's own SNSs means that users can do whatever they want on their own SNSs. For example, users tend to upload or share their daily lives on their own SNS pages. On the other hand, they usually greet or react to content on others' SNS pages such as commenting on others' posts with a short response or clicking "like" on others' writings, photos, or videos.

These posts (e.g., writings, photos, and videos) can be spread over many websites without the acknowledgment of the owner of the posts. Furthermore, one's personal information can be used for cybercrimes, because it is impossible to remove all the information already spread over many websites (Wolak *et al.*, 2007). For example, youths who frequently update their lives on websites are more exposed to a risk of being bullied online than those who express themselves less on websites (Mesch, 2009). Thus, we hypothesize that there are positive relationships between the frequency of SNS updates and the four type of cyberbullying victimization experiences. Furthermore, we divide the frequency of SNS updates between frequent updates on one's own SNSs (H2) and frequent updates on others' SNSs (H3).

The construct of 'the frequency of posting on one's own SNSs' refers to how often one posts something on his/her own SNS pages (feeds). The survey questions are: 1) how often do you share other people's writings

on your SNS? 2) how often do you post pictures and videos on your SNS? 3) how often do you reply to other people's pictures and videos on your SNS? and 4) how often do you share other people's pictures and videos on your SNS? As posted information on one's own SNS can be used by motivated offenders, we hypothesize that the frequency of posting on one's own SNSs is positively related to four types of cyberbullying victimization experiences.

H2a: The frequency of posting on one's own SNSs is positively related to the victimization experience of written-verbal cyberbullying.

H2b: The frequency of posting on one's own SNSs is positively related to the victimization experience of visual cyberbullying.

H2c: The frequency of posting on one's own SNSs is positively related to the victimization experience of exclusion cyberbullying.

H2d: The frequency of posting on one's own SNSs is positively related to the victimization experience of impersonation cyberbullying.

The construct of 'the frequency of posting on others' SNSs' refers to how often one posts something on other people's SNS pages (feeds). The survey questions are: 1) how often do you reply to other people's pictures and videos posted on others' SNSs? 2) how often do you post on other people's walls on SNSs? and 3) how often do you respond to other people's postings (e.g., clicking "Like" or "Poke") posted on others' SNSs? As the posted information can reveal one's personal information and it can be misused by motivated offenders, we hypothesize that the frequency of posting on others' SNSs is positively related to four types of cyberbullying victimization experiences.

H3a: The frequency of posting on others' SNSs

is positively related to the victimization experience of written-verbal cyberbullying.

H3b: The frequency of posting on others' SNSs is positively related to the victimization experience of visual cyberbullying.

H3c: The frequency of posting on others' SNSs is positively related to the victimization experience of exclusion cyberbullying.

H3d: The frequency of posting on others' SNSs is positively related to the victimization experience of impersonation cyberbullying.

2.3.2 Compulsive Internet Use

Internet has an important role for people to search information, to maintain relationships, and to manage communications (Meerkerk *et al.*, 2009). While using Internet for various purposes, some people may use Internet much more time than they expect and plan. This overuse of Internet can go beyond their controls, which is called compulsive Internet use (Meerkerk, *et al.*, 2009). Compulsive Internet use is referred as Internet addiction (Young, 1999; Young, 2004), Internet dependence (Wang, 2001; Yuen and Lavin, 2004), or problematic Internet use (Quayle and Taylor, 2003; Shapira *et al.*, 2000).

The construct of 'compulsive Internet use' means that how often one uses Internet beyond his/her control. The survey questions are: 1) how often do you use Internet when you are supposed to sleep? 2) how often do you think that you should use Internet less? and 3) how often do you think about Internet, even when you are not online? These questions can be answered among one of seven options (not at all, very little, a little, neutral, fairly, much, and very much). Compulsive Internet use can lead negative consequences such as cyber-sexual addiction, cyber-relationship addiction, net compulsion, and information overload (Gámez-Guadix *et al.*, 2012). In the same

vein, if one stays on Internet for a long time, (s)he will be exposed to potential threats such as cyberbullying, privacy intrusion, identity theft, etc. (Keith and Martin, 2005). As SNS platforms encourage users to upload their personal information to build and maintain social relationships, this environment of SNSs urges compulsive Internet users to be frequently present on SNSs. For this reason, people, who compulsively use Internet, tend to post much content on SNSs than those who do not compulsively use Internet. For example, when an individual use SNSs for a long period of time, he/she will engage in more activities than someone who does not. As a result, compulsive Internet users are more likely to be exposed to motivated offenders who seek vulnerable targets for cyberbullying. For example, if a SNS user who has high level of compulsive Internet use may have weak guardianship towards being cyberbullied because (s)he is exposed more time to be targeted than others who have low level of compulsive Internet use. Therefore, we hypothesize that the level of one's compulsive Internet use is positively related to the four types of cyberbullying victimization experiences.

H4a: The level of one's compulsive Internet use is positively related to the victimization experience of written-verbal cyberbullying.

H4b: The level of one's compulsive Internet use is positively related to the victimization experience of visual cyberbullying.

H4c: The level of one's compulsive Internet use is positively related to the victimization experience of exclusion cyberbullying.

H4d: The level of one's compulsive Internet use is positively related to the victimization experience of impersonation cyberbullying.

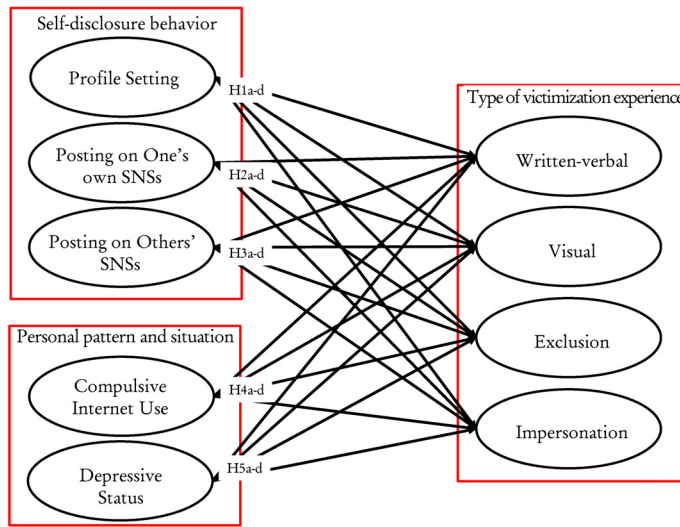
2.3.3 Depression

Depression is regarded as one of the most common

cause and effect of several social troubles. For example, depressive people tend to be addicted to drugs more often than non-depressive people (Volkow, 2004). Moreover, people who present depressive symptoms experience delinquencies more often than those who do not present depressive symptoms (Obeidallah and Earls, 1999). However, another study shows the opposite direction: those delinquencies positively affect depression (Stuewig and McCloskey, 2005). All in all, many researchers have identified that depression is related to victimization experiences of crimes (Gonggrijp *et al.*, 2023).

Other studies regarding relations between social problems and depression have found that the relation between bullying behavior and depression is bidirectional (Fekkes *et al.*, 2006). Children, who have experienced being bullied, have a higher tendency to have psychosomatic and psychosocial problems. At the same time, children who have more psychosomatic and psychosocial problems are vulnerable to be bullied (Fekkes *et al.*, 2006). This indicates that depressed children are more likely to be victimized by bullying than non-depressed children.

There are few studies about victimization experience of cyberbullying affected by depression (Gómez-Guadix *et al.*, 2012). Researchers have speculated that depression affects cyberbullying victimization, just as it affects traditional bullying victimization, even though online bullying (cyberbullying) is different from offline bullying (Kowalski and Giumetti, 2017; Patchin and Hinduja, 2006). For example, victims of cyberbullying can be attacked whether or not offenders know them. At the beginning, a damage of being cyberbullied is less physical than traditional bullying (Gómez-Guadix *et al.*, 2012). Although there is a difference between traditionally being bullied and being cyberbullied, it is likely that depressive status as a guardianship can affect victimization experience



〈Figure 1〉 Research Model

of cyberbullying. Depressed people can be less aware of surroundings and easily located by motivated offenders than those who are not depressed.

Since depression is a serious medical illness, a doctor can diagnose it. In this paper, the construct of ‘the level of one’s depressive status’ refers to the self-reported depressive status. The survey questions are: 1) generally, I feel depressed and 2) generally, I thought my life had been a failure. These questions can be answered among one of seven options (entirely disagree, mostly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, mostly agree, entirely agree). As indicated, this depressive status can be spotted by motivated offenders, we hypothesize that the level of one’s depressive status is positively related to four types of cyberbullying victimization experiences.

H5a: The level of one’s depressive status is positively related to the victimization experience of written-verbal cyberbullying.

H5b: The level of one’s depressive status is positively

related to the victimization experience of visual cyberbullying.

H5c: The level of one’s depressive status is positively related to the victimization experience of exclusion cyberbullying.

H5d: The level of one’s depressive status is positively related to the victimization experience of impersonation cyberbullying.

III. Method

As cyberbullying is a new type of crimes through the development of digital technologies, there is a paucity of studies that investigate factors related to various types of cyberbullying victimization experiences. Moreover, most studies focus on a single continent or country. There is a need to compare countries, because cultural differences can play a role in various types of cyberbullying victimization experiences. In order to investigate these differences, we selected Korea in Asia and Austria in Europe, because two countries have very different cultures, even though the areas

of two countries are similar in term of sizes (South Korea: 100,378 km² and Austria: 83,878 km²) and terrains (mountainous areas). In term of cultural differences, Korea has higher collectivism, power distance, uncertainty avoidance, and long term orientation. Meanwhile, Austria has higher individualism, masculinity, and indulgence (Hofstede Insights, 2018).

3.1 Data Collection

According to Henderson *et al.* (2010), young people tend to share their personal information on SNSs more often than old people do. Although young people recognize a risk of privacy, they believe that they can protect their privacies on SNSs by themselves (Henderson *et al.*, 2010). However, cyberbullying has become a serious social problem, especially for young people. Thus, we focused on university students who are famil-

iar with SNSs.

In Korea, 403 answers were collected through Google Docs (distributed via Kakaotalk, the most popular SNS application in Korea) and a pencil-to-paper way. After a refinement, 36 responses were deleted due to null or insincere data (e.g., the same answers for all questions). As a result, only 367 answers were used for analysis.

Among Korean participants, 271 were female and the rest participants were male. Their school years were distributed variously from 1-2 semesters to over the 6th semester. Most respondents' favorite SNS platform was Kakaotalk (85%). Additionally, Facebook (77.7%), Instagram (64%), Twitter (8.4%), and Kakaostory (4.6%) were Korean respondents' favorites. Around three-quarters of respondents (75.8%) used SNSs over one hour per a day. Participants could select more than one SNS for the question of favorite SNSs.

〈Table 1〉 Demographic Information of Korean and Austrian Respondents

| Variable | Category | Korean respondents (%) | Category | Austrian respondents (%) |
|--|-------------------|------------------------|-------------------|--------------------------|
| Gender | Male | 96 (26.2%) | Male | 66 (43.4%) |
| | Female | 271 (73.8%) | Female | 86 (56.6%) |
| Semester | 1~2 | 48 (13.1%) | 1~2 | 113 (74.3%) |
| | 3~4 | 94 (25.6%) | 3~4 | 28 (18.4%) |
| | 5~6 | 157 (42.8%) | 5~6 | 6 (3.9%) |
| | Over 6th semester | 68 (18.5%) | Over 6th semester | 5 (3.3%) |
| Favorite SNS (multiple selections are possible) | Twitter | 31 (8.4%) | Twitter | 8 (5.3%) |
| | Facebook | 285 (77.7%) | Facebook | 94 (61.8%) |
| | Kakaostory | 17 (4.6%) | Pinterest | 19 (12.5%) |
| | Kakaotalk | 312 (85.0%) | WhatsApp | 131 (86.2%) |
| | Instagram | 235 (64.0%) | Instagram | 91 (59.9%) |
| | Etc. | 26 (7.1%) | Etc. | 29 (19.1%) |
| | Nothing | 3 (0.8%) | Nothing | 2 (1.3%) |
| Usage time (h: hour) | Shorter than 0.5h | 21 (5.7%) | Shorter than 0.5h | 24 (15.8%) |
| | From 0.5h to 1h | 68 (18.5%) | From 0.5h to 1h | 38 (25%) |
| | From 1h to 1.5h | 183 (49.9%) | From 1h to 1.5h | 38 (25%) |
| | From 1.5h to 2h | 57 (15.5%) | From 1.5h to 2h | 33 (21.7%) |
| | Longer than 2h | 38 (10.4%) | Longer than 2h | 19 (12.5%) |

In Austria, 281 responses were collected via a pencil-to-paper way. Among them, only 152 responses were used because many respondents left some questions unanswered. For Austrian respondents, the percentages of female and male are 57 percent and 43 percent respectively. Most Austrian respondents liked WhatsApp (86.2%), Facebook (61.8%), and Instagram (59.9%). Furthermore, over half of respondents (59.2%) used SNSs for over one hour a day. <Table 1> shows the demographic information of Korean and Austrian respondents.

3.2 Measurement

To conduct the survey, this paper adopts questions from previous studies (see Appendix 1). The questions were modified to fit SNS context.

We used seven Likert scales, from “(1) greatly disagree” to “(7) greatly agree” in terms of compulsive Internet use and depressive status. When an individual answered questions about the frequency of changing his/her profile setting, frequency of posting (on one’s own SNSs/others’ SNSs), and victimization experience of cyberbullying, scales are from “(1) Not at all” to “(7) Very much”. Appendix 1 presents average and standard deviation of each question.

IV. Empirical Analysis

Partial Least Squares Structural Equation Modeling (PLS-SEM, specifically, smart PLS) is used to validate the proposed research model and analyze data for this study. PLS-SEM is an analysis tool for the measurement validation and structural path estimation in the research model (Hair Jr. *et al.*, 2017). PLS analysis computes optimal linear relationships between latent variables in order to account for as much of the manifest factor variation as possible, which is an advanced statistical

method based on the linear transformation from a large number of descriptors to a smaller number of latent variables (Tobias, 1995).

4.1 Measurement Model Test

First, internal reliability was verified with the data from Austria and Korea. Reliability was demonstrated by convinced composite reliability and Cronbach’s alpha value. Cronbach’s alpha is regarded as a conservative method. Therefore, composite reliability is added to confirm the reliability of the research model. When the values of composite reliability and Cronbach’s alpha are greater than 0.7, the model is considered to be internally consistent (Bagozzi and Yi, 1988; Fornell and Bookstein, 1982; Nunnally, 1978). The composite reliability and Cronbach’s alpha are described in Table 2. All items except compulsive Internet use (CIU) in Austria are above 0.7. Although Cronbach’s alpha of compulsive Internet use (CIU) in Austria (0.674) is less than 0.7, it is acceptable (Nunnally, 1978).

To prove the discriminant validity, Average Variance Extracted (AVE) should be calculated (see <Table 2>). According to Fornell and Bookstein (1982), AVE is acceptable as high as 0.5. All AVEs in the Korean and Austrian data meet this condition (Fornell and Bookstein, 1982).

Meanwhile, the square root of the average of R square and the average of AVE is used to calculate Goodness-of-Fit (GoF) as an overall measure of model fit for PLS-SEM. When GoF is higher than 0.1, it indicates that the model is qualified (Tenenhaus *et al.*, 2005). The GoF of the Korean data is 0.393 and the GoF of the Austrian data is 0.364.

Furthermore, two Tables in Appendix 2 shows cross loadings to prove discriminant validities. Discriminant validity is satisfied when factor loading on each item

is higher than other items (Chin, 1998).

In addition, <Table 3> supports the discriminant validities of the Korean and Austrian data. The colored diagonal value is the square root of AVE from each construct; it should be greatest in the same related

columns and rows. For example, the square root of the frequency of changing profile setting's AVE is 0.801 in Korea, which is the greatest value in its column. This shows that both models have appropriate discriminant validities.

<Table 2> Analysis of Reliability

| | Korea | | | Austria | | |
|-----|-----------------------|------------------|-------|-----------------------|------------------|-------|
| | Composite Reliability | Cronbach's Alpha | AVE | Composite Reliability | Cronbach's Alpha | AVE |
| PS | 0.877 | 0.812 | 0.642 | 0.856 | 0.749 | 0.665 |
| POW | 0.888 | 0.831 | 0.664 | 0.823 | 0.716 | 0.538 |
| POT | 0.906 | 0.845 | 0.764 | 0.860 | 0.760 | 0.674 |
| CIU | 0.835 | 0.733 | 0.629 | 0.789 | 0.674 | 0.560 |
| D | 0.887 | 0.747 | 0.797 | 0.868 | 0.727 | 0.768 |
| WV | 0.940 | 0.920 | 0.758 | 0.839 | 0.760 | 0.513 |
| V | 0.929 | 0.898 | 0.765 | 0.903 | 0.856 | 0.666 |
| E | 0.909 | 0.873 | 0.667 | 0.856 | 0.789 | 0.546 |
| I | 0.922 | 0.873 | 0.797 | 0.937 | 0.899 | 0.832 |

PS: Frequency of changing profile setting D: Level of depressive status
 POW: Frequency of posting on ones' own SNSs WV: Victimization experience of written-verbal cyberbullying
 POT: Frequency of posting on others' SNSs V: Victimization experience of visual cyberbullying
 CIU: Level of compulsive internet use E: Victimization experience of exclusion cyberbullying
 I: Victimization experience of impersonation cyberbullying

<Table 3> Analysis of Discriminant Validity (Korea - bottom and left; Austria - top and right)

| | PS | POW | POT | CIU | D | WV | V | E | I | AUSTRIA |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| | 0.815 | 0.605 | 0.459 | 0.278 | 0.047 | 0.368 | 0.387 | 0.368 | 0.260 | PS |
| PS | 0.801 | 0.734 | 0.672 | 0.289 | 0.091 | 0.531 | 0.491 | 0.472 | 0.332 | POW |
| POW | 0.611 | 0.815 | 0.821 | 0.443 | 0.096 | 0.532 | 0.391 | 0.395 | 0.270 | POT |
| POT | 0.584 | 0.749 | 0.874 | 0.748 | 0.215 | 0.361 | 0.212 | 0.377 | 0.165 | CIU |
| CIU | 0.064 | 0.149 | 0.166 | 0.793 | 0.876 | 0.291 | 0.218 | 0.215 | 0.201 | D |
| D | 0.084 | 0.062 | 0.087 | 0.235 | 0.893 | 0.716 | 0.613 | 0.638 | 0.510 | WV |
| WV | 0.403 | 0.529 | 0.415 | 0.323 | 0.212 | 0.871 | 0.836 | 0.618 | 0.451 | V |
| V | 0.355 | 0.398 | 0.749 | 0.250 | 0.179 | 0.586 | 0.875 | 0.739 | 0.547 | E |
| E | 0.481 | 0.508 | 0.470 | 0.242 | 0.159 | 0.685 | 0.478 | 0.817 | 0.912 | I |
| I | 0.406 | 0.399 | 0.358 | 0.238 | 0.099 | 0.669 | 0.517 | 0.626 | 0.893 | |
| KOREA | PS | POW | POT | CIU | D | WV | V | E | I | |

PS: Frequency of changing profile setting D: Level of depressive status
 POW: Frequency of posting on ones' own SNSs WV: Victimization experience of written-verbal cyberbullying
 POT: Frequency of posting on others' SNSs V: Victimization experience of visual cyberbullying
 CIU: Level of compulsive internet use E: Victimization experience of exclusion cyberbullying
 I: Victimization experience of impersonation cyberbullying

4.2 Hypothesis Testing

The coefficient (the values on the line within <Figure 2> and <Figure 3>, β) indicates how much each independent variable is related to the dependent variable.

In addition, R^2 is used to indicate how much independent variables explain the variation of a dependent variable (Cohen, 2013). If R^2 is greater than 0.26, the variation of a dependent variable, which is explained by independent variables, is highly appropriate. If it is between 0.13 and 0.26, it is moderate. When R^2 is below 0.13, it is weak (Cohen, 2013).

4.2.1 Korean Model

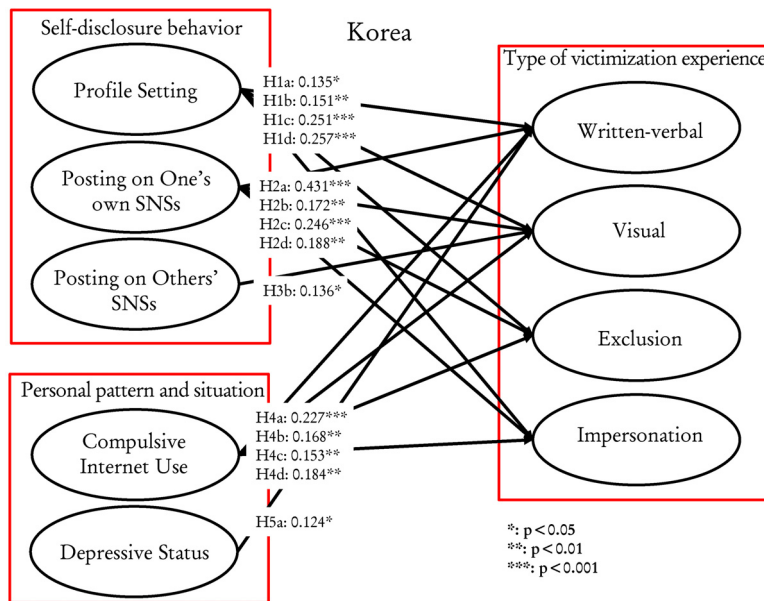
<Figure 2> shows the result of the Korean data. In self-disclosure behavior, first of all, the frequency of changing profile setting (profile setting) is positively related to each type of cyberbullying victimization experience: H1a (written-verbal): $\beta=0.135$, $p<0.05$; H1b (visual): $\beta=0.151$, $p<0.01$; H1c (exclusion): β

$=0.251$, $p<0.001$; and H1d (impersonation): $\beta=0.257$, $p<0.001$).

Second, the frequency of posting on one's own SNSs is also positively related to each type of cyberbullying victimization experience: H2a (written-verbal): $\beta=0.431$, $p<0.001$; H2b (visual): $\beta=0.172$, $p<0.01$; H2c (exclusion): $\beta=0.246$, $p<0.001$; and H2d (impersonation): $\beta=0.188$, $p<0.01$.

Third, the frequency of posting on others' SNSs, on the other hand, is positively related to only the victimization experience of visual cyberbullying (H3b: $\beta=0.136$, $p<0.05$). Except for H3b, the other three hypotheses are insignificant.

We furthermore tested how users' personal pattern of Internet use (compulsive Internet use) and personal situation (depressive status) are related to each type of cyberbullying victimization experience. The levels of compulsive Internet use (CIU) is positively related to each type of cyberbullying victimization experience (H4a: $\beta=0.227$, $p<0.001$; H4b: $\beta=0.168$, $p<0.01$; H4c:



<Figure 2> Result of the Korean Data

$\beta=0.153, p<0.01$; H4d: $\beta=0.184, p<0.01$).

Interestingly, the level of depressive status is positively related to only victimization experience of written-verbal cyberbullying (H5a; $\beta=0.124, p<0.05$). Except for H5a, the other three hypotheses are insignificant.

The R^2 of each type of cyberbullying is written-verbal: 0.367, visual: 0.236, exclusion: 0.345, and impersonation: 0.237. Thus, these R^2 s are appropriate to accept the relations.

4.2.2 Austrian Model

<Figure 3> shows the result of the Austrian data.

In self-disclosure behavior, first of all, the frequency of changing profile setting is positively related to only victimization experience of visual cyberbullying (H1b; $\beta=0.137, p<0.05$) out of four types, which is very different from the result of the Korean data.

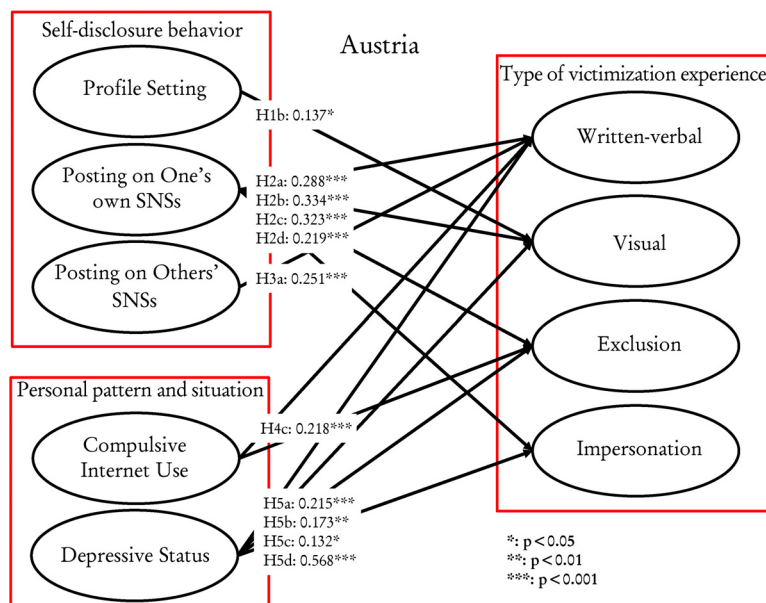
Second, the frequency of posting on one's own SNSs is positively related to each type of cyberbully-

ing victimization experience: H2a (written-verbal): $\beta=0.288, p<0.001$; H2b (visual): $\beta=0.334, p<0.001$; H2c (exclusion): $\beta=0.323, p<0.001$; and H2d (impersonation): $\beta=0.219, p<0.001$.

Third, the frequency of posting on others' SNSs, on the other hand, is positively related to only the victimization experience of written-verbal cyberbullying (H3a: $\beta=0.251, p<0.001$). Except for H3a, the other three hypotheses are insignificant.

We also tested how users' personal pattern of Internet use (compulsive Internet use) and personal situation (depressive status) are related to each type of cyberbullying victimization experience. The level of compulsive Internet use (CIU) is positively related to only exclusion cyberbullying victimization experience (H4c; $\beta=0.218, p<0.001$). H4a (written-verbal), H4b (visual), and H4d (impersonation) are not significant.

Differing from the result of the Korea data, the level of depressive status is positively related to all types of cyberbullying victimization experiences: H5a



<Figure 3> Result of the Austrian Data

〈Table 4〉 Results of the Hypotheses

| Hypothesis | | Korea | | Austria | |
|------------|--|----------------------|-----------|----------------------|-----------|
| | | β | Result | β | Result |
| H1a | Profile setting → written-verbal | 0.135 [*] | Supported | 0.038 | N.S. |
| H1b | Profile setting → visual cyberbullying | 0.151 ^{**} | Supported | 0.137 [*] | Supported |
| H1c | Profile setting → exclusion | 0.251 ^{***} | Supported | 0.094 | N.S. |
| H1d | Profile setting → impersonation | 0.257 ^{***} | Supported | 0.088 | N.S. |
| H2a | Posting on one's own → written-verbal | 0.431 ^{***} | Supported | 0.288 ^{***} | Supported |
| H2b | Posting on one's own → visual | 0.172 ^{**} | Supported | 0.334 ^{***} | Supported |
| H2c | Posting on one's own → exclusion | 0.246 ^{***} | Supported | 0.323 ^{***} | Supported |
| H2d | Posting on one's own → impersonation | 0.188 ^{**} | Supported | 0.219 ^{***} | Supported |
| H3a | Posting on others' → written-verbal | -0.036 | N.S. | 0.251 ^{***} | Supported |
| H3b | Posting on others' → visual | 0.136 [*] | Supported | 0.086 | N.S. |
| H3c | Posting on others' → exclusion | 0.107 | N.S. | 0.025 | N.S. |
| H3d | Posting on others' → impersonation | 0.034 | N.S. | 0.06 | N.S. |
| H4a | Compulsive Internet use → written-verbal | 0.227 ^{***} | Supported | 0.110 | N.S. |
| H4b | Compulsive Internet use → visual | 0.168 ^{**} | Supported | 0.002 | N.S. |
| H4c | Compulsive Internet use → exclusion | 0.153 ^{**} | Supported | 0.218 ^{***} | Supported |
| H4d | Compulsive Internet use → impersonation | 0.184 ^{**} | Supported | 0.014 | N.S. |
| H5a | Depressive status → written-verbal | 0.124 [*] | Supported | 0.215 ^{***} | Supported |
| H5b | Depressive status → visual | 0.105 | N.S. | 0.173 ^{**} | Supported |
| H5c | Depressive status → exclusion | 0.077 | N.S. | 0.132 [*] | Supported |
| H5d | Depressive status → impersonation | 0.020 | N.S. | 0.568 ^{***} | Supported |

(written-verbal): $\beta=0.215$, $p<0.001$; H5b (visual): $\beta=0.173$, $p<0.01$; H5c (exclusion): $\beta=0.132$, $p<0.05$; H5d (impersonation): $\beta=0.568$, $p<0.001$.

The R^2 of each type of cyberbullying is written-verbal: 0.403, visual: 0.289, exclusion: 0.308, and impersonation: 0.148. Thus, these R^2 s are appropriate to accept the relations even though the R^2 of impersonation is moderate.

The testing results of hypotheses in Korea and Austria are included in <Table 4>.

V. Discussion

As shown <Table 4>, there are some similarities and differences regarding factors affecting each type of cyberbullying victimization experience between the

results in Korea and those in Austria.

5.1 Self-disclosure and Four Types of Cyberbullying Victimization Experience

The relations between the factors regarding self-disclosure (the frequency of changing profile setting, the frequency of posting on ones' own SNSs, and the frequency of posting on others' SNSs) and each type of cyberbullying victimization experience show some similarities and differences between Korean and Austrian data.

First, the frequency of changing profile setting has a positive relation with each type of cyberbullying victimization experience in Korea. While it has a pos-

itive relation with only visual cyberbullying victimization experience in Austria. It means that a profile picture can be used for being visually cyberbullied in Austria. On the other hand, a profile picture and other profile information can be used for all types of cyberbullying victimization experiences in Korea. Moreover, the frequency of changing profile setting in Korea has stronger relations with exclusion and impersonation cyberbullying victimization experiences than written-verbal and visual cyberbullying victimization experiences. We speculate that talking about someone's profile information is relevant to collectivistic culture. Within a group, people may think that talking about others' profiles is allowed (Chen and Marcus, 2012). For this reason, someone's profile information is spread on SNSs and can be located by motivated offenders in more collectivistic society like Korea than Austria.

Second, the frequency of posting on one's own SNSs has a positive relation with each type of cyberbullying victimization experience both in Korea and Austria. In Korea, the frequency of posting on one's own SNSs has a much stronger relation with written-verbal cyberbullying victimization experience ($\beta=0.431$) than other types of cyberbullying victimization experiences. The second strongest relation is with exclusion cyberbullying victimization experience ($\beta=0.246$). In contrast, the relations between the frequency of posting on one's own SNSs and each type of cyberbullying victimization experience in Austria have similar strengths. The strongest relation is between the frequency of posting on one's own SNSs and visual cyberbullying victimization experience ($\beta=0.334$) and the second strongest relation is between the frequency of posting on one's own SNSs and exclusion cyberbullying victimization experience ($\beta=0.323$).

Third, the relations between the frequency of posting on others' SNSs and each type of victimization experi-

ence illustrate a clear difference between Korea and Austria. In Korea, the relation between the frequency of posting on others' SNSs and visual cyberbullying victimization experience is proved. Alternatively, the relation between the frequency of posting on others' SNSs and written-verbal cyberbullying victimization experience is demonstrated in Austria.

As mentioned, self-disclosure is a natural way to build and manage a relation with others (Liu *et al.*, 2016). On SNSs, we categories self-disclosure into three: the frequencies of changing profile setting, posting on one's own SNSs, and posting others' SNSs. According to RAT (Routine Activity Theory), natural self-disclosure behavior on SNSs can be routine activities that are related to a capable guardianship. Unfortunately, this disclosed personal information can be used by a motivated offender for cyberbullying. In Korea, the frequency of changing profile setting and the frequency of posting on one's own SNSs are related to all types of cyberbullying victimization experience. In addition, the frequency of posting on others' SNSs is related to only visual cyberbullying victimization experience. Meanwhile, in Austria, only the frequency of posting on one's own SNSs is related to all types of cyberbullying victimization experiences. Then, the frequency of changing profile setting is related to only visual cyberbullying victimization experience and the frequency of posting on others' SNSs is related to only written-verbal cyberbullying victimization experience.

5.2 Compulsive Internet use and four types of cyberbullying victimization experience

People who stay online for a long time can be targeted by a motivated offender for cybercrimes (Smith *et al.*, 2008). Furthermore, compulsive Internet use is

positively related to cyberbullying and being cyberbullied in the study focusing on Korean youths (Jung *et al.*, 2014). From the view of RAT (Routine Activity Theory), a SNS user tends to be more exposed to a motivated offender if (s)he has compulsive Internet use than others who are not compulsive Internet users. The results of this study also echo that compulsive Internet use is related to cyberbullying victimization experience. In Korea, compulsive Internet use is positively related to each type of cyberbullying victimization experience. On the other hand, compulsive Internet use is positively related to only exclusion cyberbullying victimization experience in Austria. Especially, compulsive Internet use is mostly related to verbal-written cyberbullying victimization experience in Korea, meanwhile, it is related to only exclusion cyberbullying victimization experience in Austria.

5.3 Depressive status and four types of cyberbullying victimization experience

Depression is considered as a factor of cyberbullying in many studies (Fekkes *et al.*, 2006; Gámez-Guadix *et al.*, 2012; Kowalski and Giumetti, 2017; Patchin and Hinduja, 2006). However, as far as we know, these studies have not considered a possible difference among nations. This research as an explorative study shows different results between Korea and Austria. The average level of depressive status of our data shows that Korean respondents are more depressed than Austrian respondents. However, according to WHO (World Health Organization, 2023), 5.1 percent of population in Austria and 4.1 percent of population in Korea indicate depressive disorders. Considering this research is not based on a medical examination but on respondents' self-reports, the level of depressive status in our study does not refer to a medical disorder.

However, as a self-reported personal depressive status (e.g., Generally, I feel depressed; and I thought my life had generally been a failure), Korean respondents can sometimes regard themselves depressed.

Considering the difference of how respondents of each nation self-evaluate themselves, one's level of depressive status is positively related to only written-verbal cyberbullying victimization experiences in Korea, but that is positively related to all types of cyberbullying victimization experiences in Austria. It means that the level of depressive status in Austria is vulnerable to all types of cyberbullying. One reason for these results is that Austrian respondents realistically evaluate themselves, meanwhile, Korean respondents over-evaluate themselves in their situations as depressed. As the level of depressive status is related to one's guardianship, motivated offenders can locate a vulnerable person as a suitable target. In this sense, one's level of depression in Austria is actually reflected his/her depression when (s)he uses SNSs.

VI. Contributions and Conclusions

6.1 Theoretical Contributions

First, this research expands routine activity theory (RAT) to cyberbullying from the perspective of cyberbullying victimization experience. According to RAT, crimes occur when motivated offender, suitable target, and the absence of capable guardianship are converged at the same time and place. As guardianship, we confirm that self-disclosure, the level of compulsive Internet use, and the level of depressive status are related to cyberbullying victimization experience.

Second, we specifically categorize three kinds of self-disclosure: the frequency of changing profile setting, the frequency of posting on ones' own SNSs,

and the frequency of posting on others' SNSs as well as four types of cyberbullying victimization experiences: written-verbal, visual, exclusion, and impersonal. Furthermore, we investigate how these three kinds of self-disclosure, personal usage pattern of Internet (compulsive Internet use), and personal status (depressive status) influence four types of cyberbullying victimization experiences. Instead of considering cyberbullying victimization as a whole, we elaborate cyberbullying victimization into four types (written-verbal, visual, exclusion, and impression) in order to investigate how these four types are differently influenced by five factors.

Third, we compare the results from Korea in Asia versus those from Austria in Europe. Comparing the relations between independent factors (three kinds of self-disclosure, compulsive Internet use, and depressive status) and four types of cyberbullying victimization experiences between two nations, we recognize a need to consider cultural differences in studying cyberbullying victimization experiences. As shown in the results, there are clear differences in cyberbullying victimization experiences as well as there are some similarities.

6.2 Practical Contributions

The results can be used to educate people about how to use SNSs and also used for SNS providers to develop a monitoring system in order to monitor and alarm potential cyberbullying attacks. For example, SNS providers can develop a system to send a message for too frequently posting users. Especially, the frequencies of changing one's profile and posting on one's own SNSs in Austria are positively related to visual victimization experience. Accordingly, the message can include data shown the relations between the number of frequently changing one's profile as well as

frequently posting on one's own SNSs and visual cyberbullying victimization experience. The message can also include data shown the number of visitors who see each posting and the list of visitors who are suspicious. Furthermore, our findings demonstrate needs for SNS providers to observe suspicious activities and send a warning message to users about their suspicious activities. These users can be categorized under a group that should be carefully monitored and examined if it is necessary. Suspicious activities can include posting other people's photos and videos with negative or harassing comments.

Moreover, the results emphasize a need to legislate law regarding cyberbullying. Although there is a law about cyberbullying, lawmakers need to consider different types of cyberbullying victimization experiences in order to make sophisticated laws. For example, one Korean law regarding school bullying defines cyberbullying as cyber exclusion. Meanwhile, there is another law about privacy protections as cyber stalking, cyber defamation, cyber contempt, etc. (Choi, Y. and Hong, 2012). On the other hand, there had been no law about cyberbullying until the law of online bullying offence has been legislated since January 2016 in Austria (The Local, 2016). Although both countries have legislated laws to stop, at least reduce the number of cyberbullying related to crimes, it is still difficult to define cyberbullying by law and to decide who should be punished as well as how much damage caused to victims (Lee, W., 2013). Thus, we urge lawmakers to develop and legislate further refined and advanced laws corresponding to each type of cyberbullying.

6.3 Limitations, Future Research, and Conclusion

There are limitations in this research. First, we con-

ducted survey focusing on university students in Korea and Austria. As the results are different between two nations, it is not easy to apply the results to other nations. Thus, it is maybe needed to conduct survey in various countries and age groups, and compare them.

Second, due to the fact that we quantitatively studied self-disclosure (the frequencies of different kinds of self-disclosure), the proposed model does not reflect the qualitative self-disclosure. The qualitative self-disclosure should be included and analyzed in future research using content analysis or other tools in order to understand cyberbullying victimization experience in depth.

Third, we clearly identify differences and similarities between two nations. However, we can't clearly explain some of differences, even though these are out of our research scope. For example, 1) the frequency of posting on one's own SNSs positively related to written-verbal cyberbullying victimization experience (β : 0.431^{***}), but the frequency of posting on others' SNS is not related to written-verbal cyberbullying victimization experience (β : -0.036) in Korea. 2) The frequency of posting on one's own SNSs is positively related to visual cyberbullying victimization experience (β : 0.334^{**}), even though there is no relationship between the frequency of posting on others' SNSs and visual cyberbullying victimization experience (β : 0.086) in Austria. To clearly explain the differences between two nations, future research should be designed to investigate these differences.

This paper identifies how self-disclosure behavior (the frequency of changing profile setting, the frequency of posting on ones' own SNSs, and the frequency of posting on others' SNSs), the level of compulsive Internet use, and the level of depressive status are related to four types of cyberbullying victimization experiences on SNSs by comparing data from Korea and Austria.

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〈Appendix 1〉 Item Questionnaire, Average, Standard Deviation, and Source

| Item | Survey Questions | Korea | | Austria | | Reference |
|-------|---|-------|-------|---------|-------|-------------------------------|
| | | Mean | S. D. | Mean | S.D. | |
| PS_1 | How often do you post status (e.g., married, etc.) updates on your SNS? | 2.240 | 1.505 | 1.836 | 1.273 | Carpenter (2012) |
| PS_2 | How often do you update your profile information on your SNS? | 2.730 | 1.707 | 2.500 | 1.229 | |
| PS_3 | How often do you change your profile picture on your SNS? | 3.537 | 1.709 | 2.007 | 1.052 | |
| POW_1 | How often do you share other people's writings on your SNS? | 3.134 | 1.790 | 2.007 | 1.242 | Ross <i>et al.</i> (2009) |
| POW_2 | How often do you post pictures and videos on your SNS? | 3.090 | 1.779 | 2.809 | 1.482 | |
| POW_3 | How often do you reply to other people's pictures and videos on your SNS? | 2.845 | 1.648 | 2.941 | 1.479 | |
| POW_4 | How often do you share other people's pictures and videos on your SNS? | 2.986 | 1.734 | 1.993 | 1.226 | |
| POT_1 | How often do you reply to other people's pictures and videos posted on others' SNSs? | 3.411 | 1.808 | 2.296 | 1.150 | |
| POT_2 | How often do you post on other people's walls on SNS? | 2.706 | 1.582 | 1.678 | 0.918 | |
| POT_3 | How often do you respond to other people's postings (e.g., clicking "Like" or "Poke") posted on others' SNSs? | 4.332 | 1.965 | 3.908 | 1.899 | |
| CIU_1 | How often you use the Internet when you are supposed to sleep? | 3.510 | 1.780 | 4.191 | 1.793 | Meerkerk <i>et al.</i> (2006) |
| CIU_2 | How often do you think you should use the internet less often? | 4.281 | 1.765 | 4.289 | 1.840 | |
| CIU_3 | How often do you think about the internet, even while you are not online? | 2.308 | 1.395 | 2.566 | 1.445 | |
| D_1 | Generally, I feel depressed | 3.864 | 1.541 | 2.559 | 1.631 | Radloff(1977) |
| D_2 | Generally, I thought my life had been a failure | 3.466 | 1.523 | 1.849 | 1.316 | |
| WV_1 | I have received nasty or insulting messages, comments, or content through SNSs | 2.199 | 1.436 | 1.750 | 1.169 | Kwan and Skoric(2013) |
| WV_2 | I have seen insulting messages, comments or postings on SNSs about me that damaged my reputation | 2.264 | 1.442 | 1.467 | 1.035 | |
| WV_3 | I have experienced that someone misunderstood me because of a message, comment, or posting about me on SNSs | 2.330 | 1.474 | 2.336 | 1.465 | |

| | | | | | | |
|------|---|-------|-------|-------|-------|---|
| WV_4 | I have seen a message, comment, or content on SNSs that made fun of me | 2.158 | 1.398 | 1.664 | 1.196 | |
| WV_5 | I have experienced that someone posted a message, comment, or posting on SNSs, which revealed my secret | 2.090 | 1.357 | 1.408 | 0.894 | |
| V_1 | I have experienced that someone took a picture or video of me and posted it on SNSs without my permission | 2.951 | 1.719 | 2.020 | 1.284 | Den Hamer <i>et al.</i> (2014) |
| V_2 | I have experienced that someone uploaded my picture or video on SNSs that I wanted to hide | 2.313 | 1.527 | 1.645 | 1.209 | |
| V_3 | I have experienced that someone posted my picture or video on SNSs which humiliated me | 2.395 | 1.599 | 1.520 | 1.023 | |
| V_4 | I have experienced that someone posted my picture or video on SNSs that I did not want to be shown | 2.548 | 1.591 | 1.691 | 1.186 | |
| E_1 | I have experienced that someone rejected my request of being my friend or follower on SNSs | 2.294 | 1.437 | 2.270 | 1.423 | Prinstein <i>et al.</i> (2001) |
| E_2 | I have experienced that my posting or reply was ignored on SNSs | 3.104 | 1.684 | 2.283 | 1.289 | |
| E_3 | Although I want to get along with some friends on SNSs, I have experienced that they ignored my posting | 2.161 | 1.382 | 1.882 | 1.297 | |
| E_4 | I have experienced that someone avoided me on SNSs | 2.041 | 1.335 | 1.895 | 1.197 | |
| E_5 | I have experienced that someone blocked me on SNSs | 1.877 | 1.367 | 1.882 | 1.414 | |
| I_1 | I have experienced that someone logged in my account and posted a comment or posting on SNSs that damaged my reputation | 1.845 | 1.261 | 1.487 | 1.016 | Den Hamer <i>et al.</i> (2014), Kwan and Skoric(2013) |
| I_2 | I have experienced that someone logged in my account and updated or modified my profile information on SNSs | 1.905 | 1.427 | 1.355 | 0.924 | |
| I_3 | I have experienced that someone logged in my account and contacted my "friends" on SNSs | 1.929 | 1.397 | 1.395 | 0.964 | |

PS: Frequency of changing profile setting

D: Level of depressive status

POW: Frequency of posting on ones' own SNSs WV: Victimization experience of written-verbal cyberbullying

POT: Frequency of posting on others' SNSs V: Victimization experience of visual cyberbullying

CIU: Level of compulsive Internet use

E: Victimization experience of exclusion cyberbullying

I: Victimization experience of impersonation cyberbullying

〈Appendix 2〉 Analysis of Factor Loading

| KOREA | PS | POW | POT | CIU | D | WV | V | E | I |
|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|
| PS_1 | 0.720 | 0.369 | 0.412 | 0.086 | 0.052 | 0.343 | 0.268 | 0.400 | 0.376 |
| PS_2 | 0.781 | 0.441 | 0.421 | -0.016 | 0.031 | 0.311 | 0.336 | 0.377 | 0.326 |
| PS_3 | 0.805 | 0.561 | 0.494 | 0.050 | 0.097 | 0.293 | 0.243 | 0.352 | 0.259 |
| POW_1 | 0.459 | 0.777 | 0.535 | 0.072 | 0.043 | 0.402 | 0.303 | 0.351 | 0.314 |
| POW_2 | 0.539 | 0.789 | 0.681 | 0.140 | 0.056 | 0.401 | 0.335 | 0.439 | 0.301 |
| POW_3 | 0.491 | 0.842 | 0.647 | 0.141 | 0.045 | 0.503 | 0.362 | 0.455 | 0.358 |
| POW_4 | 0.501 | 0.849 | 0.568 | 0.126 | 0.058 | 0.408 | 0.290 | 0.399 | 0.326 |
| POT_1 | 0.527 | 0.693 | 0.921 | 0.157 | 0.059 | 0.346 | 0.332 | 0.363 | 0.288 |
| POT_2 | 0.492 | 0.646 | 0.859 | 0.127 | 0.029 | 0.426 | 0.335 | 0.496 | 0.401 |
| POT_3 | 0.515 | 0.623 | 0.841 | 0.154 | 0.149 | 0.303 | 0.356 | 0.361 | 0.233 |
| CIU_1 | 0.043 | 0.065 | 0.098 | 0.809 | 0.295 | 0.176 | 0.223 | 0.146 | 0.147 |
| CIU_2 | 0.074 | 0.070 | 0.107 | 0.697 | 0.217 | 0.169 | 0.112 | 0.128 | 0.059 |
| CIU_3 | 0.047 | 0.176 | 0.169 | 0.865 | 0.117 | 0.354 | 0.231 | 0.256 | 0.280 |
| D_1 | 0.089 | 0.086 | 0.111 | 0.183 | 0.877 | 0.185 | 0.164 | 0.109 | 0.069 |
| D_2 | 0.063 | 0.029 | 0.049 | 0.233 | 0.908 | 0.193 | 0.157 | 0.170 | 0.106 |
| WV_1 | 0.332 | 0.484 | 0.336 | 0.277 | 0.202 | 0.875 | 0.478 | 0.558 | 0.533 |
| WV_2 | 0.310 | 0.437 | 0.335 | 0.266 | 0.229 | 0.847 | 0.464 | 0.579 | 0.536 |
| WV_3 | 0.381 | 0.504 | 0.389 | 0.287 | 0.141 | 0.869 | 0.546 | 0.631 | 0.544 |
| WV_4 | 0.383 | 0.443 | 0.376 | 0.283 | 0.164 | 0.894 | 0.552 | 0.616 | 0.623 |
| WV_5 | 0.349 | 0.427 | 0.369 | 0.293 | 0.190 | 0.868 | 0.510 | 0.599 | 0.681 |
| V_1 | 0.311 | 0.336 | 0.346 | 0.249 | 0.198 | 0.462 | 0.854 | 0.395 | 0.412 |
| V_2 | 0.257 | 0.312 | 0.312 | 0.225 | 0.128 | 0.514 | 0.874 | 0.417 | 0.473 |
| V_3 | 0.363 | 0.404 | 0.375 | 0.184 | 0.148 | 0.557 | 0.882 | 0.444 | 0.477 |
| V_4 | 0.303 | 0.331 | 0.326 | 0.218 | 0.149 | 0.516 | 0.889 | 0.416 | 0.447 |
| E_1 | 0.360 | 0.411 | 0.385 | 0.125 | 0.074 | 0.548 | 0.395 | 0.801 | 0.507 |
| E_2 | 0.440 | 0.441 | 0.423 | 0.180 | 0.171 | 0.425 | 0.371 | 0.731 | 0.369 |
| E_3 | 0.433 | 0.448 | 0.411 | 0.231 | 0.106 | 0.656 | 0.434 | 0.894 | 0.641 |
| E_4 | 0.386 | 0.389 | 0.374 | 0.231 | 0.174 | 0.628 | 0.414 | 0.882 | 0.555 |
| E_5 | 0.320 | 0.369 | 0.311 | 0.211 | 0.113 | 0.536 | 0.326 | 0.761 | 0.476 |
| I_1 | 0.386 | 0.356 | 0.348 | 0.231 | 0.076 | 0.649 | 0.468 | 0.585 | 0.915 |
| I_2 | 0.337 | 0.382 | 0.324 | 0.200 | 0.089 | 0.583 | 0.472 | 0.580 | 0.889 |
| I_3 | 0.363 | 0.332 | 0.284 | 0.206 | 0.101 | 0.557 | 0.445 | 0.511 | 0.875 |

PS: Frequency of changing profile setting

D: Level of depressive status

POW: Frequency of posting on ones' own SNSs

WV: Victimization experience of written-verbal cyberbullying

POT: Frequency of posting on others' SNSs

V: Victimization experience of visual cyberbullying

CIU: Level of compulsive internet use

E: Victimization experience of exclusion cyberbullying

I: Victimization experience of impersonation cyberbullying

| AUSTRIA | PS | POW | POT | CIU | D | WV | V | E | I |
|---------|-------|-------|--------|-------|--------|-------|-------|-------|-------|
| PS_1 | 0.813 | 0.608 | 0.476 | 0.200 | 0.032 | 0.298 | 0.322 | 0.261 | 0.226 |
| PS_2 | 0.782 | 0.411 | 0.329 | 0.212 | 0.090 | 0.288 | 0.319 | 0.314 | 0.258 |
| PS_3 | 0.850 | 0.433 | 0.292 | 0.273 | -0.006 | 0.315 | 0.304 | 0.332 | 0.145 |
| POW_1 | 0.308 | 0.707 | 0.449 | 0.098 | -0.007 | 0.361 | 0.354 | 0.372 | 0.252 |
| POW_2 | 0.537 | 0.745 | 0.514 | 0.364 | 0.130 | 0.415 | 0.417 | 0.406 | 0.255 |
| POW_3 | 0.467 | 0.766 | 0.602 | 0.281 | 0.057 | 0.417 | 0.287 | 0.348 | 0.220 |
| POW_4 | 0.437 | 0.715 | 0.395 | 0.058 | 0.068 | 0.357 | 0.376 | 0.244 | 0.248 |
| POT_1 | 0.422 | 0.552 | 0.880 | 0.429 | 0.090 | 0.453 | 0.364 | 0.349 | 0.224 |
| POT_2 | 0.360 | 0.591 | 0.844 | 0.300 | 0.092 | 0.522 | 0.400 | 0.356 | 0.308 |
| POT_3 | 0.349 | 0.514 | 0.732 | 0.376 | 0.047 | 0.302 | 0.152 | 0.252 | 0.098 |
| CIU_1 | 0.068 | 0.049 | 0.240 | 0.670 | 0.238 | 0.103 | 0.091 | 0.156 | 0.012 |
| CIU_2 | 0.106 | 0.156 | 0.235 | 0.657 | 0.171 | 0.092 | 0.082 | 0.156 | 0.132 |
| CIU_3 | 0.322 | 0.324 | 0.439 | 0.895 | 0.147 | 0.432 | 0.231 | 0.410 | 0.172 |
| D_1 | 0.049 | 0.098 | 0.154 | 0.226 | 0.953 | 0.320 | 0.231 | 0.243 | 0.204 |
| D_2 | 0.030 | 0.048 | -0.050 | 0.127 | 0.792 | 0.145 | 0.127 | 0.093 | 0.136 |
| WV_1 | 0.300 | 0.419 | 0.410 | 0.304 | 0.198 | 0.716 | 0.429 | 0.416 | 0.345 |
| WV_2 | 0.203 | 0.296 | 0.291 | 0.146 | 0.140 | 0.594 | 0.354 | 0.356 | 0.325 |
| WV_3 | 0.213 | 0.318 | 0.408 | 0.365 | 0.294 | 0.693 | 0.339 | 0.476 | 0.275 |
| WV_4 | 0.268 | 0.388 | 0.428 | 0.286 | 0.167 | 0.791 | 0.490 | 0.503 | 0.365 |
| WV_5 | 0.323 | 0.465 | 0.348 | 0.162 | 0.226 | 0.770 | 0.573 | 0.518 | 0.516 |
| V_1 | 0.234 | 0.383 | 0.321 | 0.151 | 0.185 | 0.428 | 0.779 | 0.455 | 0.336 |
| V_2 | 0.294 | 0.439 | 0.304 | 0.151 | 0.157 | 0.489 | 0.866 | 0.560 | 0.311 |
| V_3 | 0.368 | 0.437 | 0.403 | 0.215 | 0.183 | 0.614 | 0.828 | 0.511 | 0.513 |
| V_4 | 0.389 | 0.379 | 0.271 | 0.185 | 0.205 | 0.504 | 0.868 | 0.537 | 0.332 |
| E_1 | 0.233 | 0.340 | 0.279 | 0.192 | 0.142 | 0.462 | 0.499 | 0.755 | 0.398 |
| E_2 | 0.127 | 0.301 | 0.370 | 0.372 | 0.147 | 0.440 | 0.327 | 0.723 | 0.390 |
| E_3 | 0.369 | 0.464 | 0.355 | 0.303 | 0.134 | 0.583 | 0.617 | 0.820 | 0.374 |
| E_4 | 0.235 | 0.310 | 0.227 | 0.309 | 0.190 | 0.512 | 0.501 | 0.783 | 0.503 |
| E_5 | 0.377 | 0.298 | 0.209 | 0.203 | 0.189 | 0.328 | 0.298 | 0.595 | 0.366 |
| I_1 | 0.204 | 0.234 | 0.212 | 0.119 | 0.242 | 0.426 | 0.428 | 0.529 | 0.874 |
| I_2 | 0.278 | 0.345 | 0.269 | 0.153 | 0.164 | 0.508 | 0.411 | 0.477 | 0.927 |
| I_3 | 0.223 | 0.321 | 0.254 | 0.177 | 0.151 | 0.456 | 0.397 | 0.496 | 0.934 |

PS: Frequency of changing profile setting

D: Level of depressive status

POW: Frequency of posting on ones' own SNSs WV: Victimization experience of written-verbal cyberbullying

POT: Frequency of posting on others' SNSs V: Victimization experience of visual cyberbullying

CIU: Level of compulsive internet use

E: Victimization experience of exclusion cyberbullying

I: Victimization experience of impersonation cyberbullying

Cyberbullying Victimization Experience on SNSs: Focusing on Self-disclosure, Compulsive Internet Use, and Depressive Status

Jooyeon Won* · DongBack Seo**

Abstract

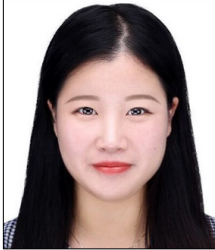
Cyberbullying has become a critical issue as people (especially, young people) daily use social networking sites (SNSs). This study investigates possible factors affecting cyberbullying victimization experiences, comparing SNS users in Austria and Korea. Particularly, this study focuses on how individuals' self-disclosure patterns, compulsive Internet use, and depressive status are related to four different types of cyberbullying victimization experiences (written-verbal, visual, exclusion, and impersonation). Furthermore, the results are compared between SNS users in Austria and Korea. Results from total 519 respondents show that self-disclosure patterns on SNSs, compulsive Internet use, and depressive status are positively related to different types of cyberbullying victimization experiences. However, there are differences between Austria and Korea. For example, the frequency of changing one's profile setting is positively related to all types of cyberbullying victimization experiences in Korea, while it is only positively related to victimization experience of visual cyberbullying in Austria. Depressive status is only positively related to victimization experience of written-verbal cyberbullying in Korea, while it is positively related to all types of cyberbullying victimization experience in Austria.

Keywords: Cyberbullying, SNS, Self-disclosure, Depressive Status, Compulsive Internet Use, Routine Activity Theory

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충북대학교 대학원 국제경영정보과학 협동과정에서 석사학위를 받았다. 주요 관심 분야는 SNS, 커뮤니케이션, 마케팅 등이다.



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Dongback Seo earned her Doctor of Philosophy and Masters of Science in Management Information Systems from the University of Illinois at Chicago. Prior to pursuing the Ph.D. program, she worked as a software engineer in a mobile communications firm and as a small business owner. Her publications include three books, recently published *Evolution and Standardization of Mobile Communications Technology*, as well as a class manual and several chapters. Her papers have been published in many journals (e.g., *Journal of AIS*, *European Journal of Information Systems*, *Government Information Quarterly*, *Technovation*, *Communications of the ACM*, *Telecommunications Policy*, etc.) and conference proceedings (e.g., *International Conference on Information Systems*, *European Conference on Information Systems*, etc.). Her research interests include the areas of digital innovation, adoption of digital-enabled services from the perspectives of individuals and organizations, organizational standards strategy, digital eco-systems, and analysis of competitive dynamics in rapidly changing industries. She is currently a professor in the Department of Management Information Systems at ChungBuk National University (CBNU), Republic of Korea.

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