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A Study on the Effect of Comparison with Others and Social Support on Life Satisfaction of Facebook

SeoYoung Lee

Dong Yang University, North Seoul Campus, South Korea
Email: leeseoyoungann1004@gmail.com

Abstract

This study investigates the effect of Facebook users' envy of other users and social support on life satisfaction with self-esteem as a mediating variable. The survey was conducted on 1332 female and male Facebook users in five main Korean cities. The results showed that user's envy of other people and social support had a significant effect on life satisfaction. In addition, the greater the upward comparison with others, the lower the self-esteem, which leads to lower life satisfaction; When Facebook users upward compare themselves with others, it lowers their self-esteem which in turn reduces their life satisfaction. And when users have social support, they will have better self-esteem, which leads to higher life satisfaction Finally, the implications, discussions and limitations of this study are presented.

1. Introduction

This paper investigates if people are happy or unhappy after using Facebook; and to also observe if upward comparison by Facebook users and social support affects life satisfaction using self-esteem as mediating variable. I investigate how the variables' self-esteem, upward social comparison of Facebook users and social support affect life satisfaction. A common phenomenon on Facebook is that individuals upload images that exaggerate their life. It also allows users to comment on their friend's photos or to click on "Likes". Because of these functions,

Facebook is positioned as an emotional-oriented interaction service that communicates personal daily life experiences and emotions with their acquaintances (Yoon & Lim, 2012).

Typically, they would post articles or photographs that would positively shape their own image. Recent studies found that image management was the most important reason for using Facebook (Yang, Kim, & Suh, 2012). Facebook users would check on the images of other users to see how others respond to such images (Yang, Kim, & Suh, 2014). Research on the use of Facebook in relation to narcissism has been actively conducted (Carpenter, 2012; Kapidzic, 2013; Panek, Nardis, & Konrath, 2013).

As a part of academic efforts to understand the self-expression behavior of SNS users, many studies have focused on psychological characteristics such as personality and self-concept.

This study aims to find out whether Facebook usage contributes to the user's happiness, or to feelings of relative deprivation and diminished life satisfaction. Specifically, I tried to find out how Facebook's upward comparison with users and social support affect life satisfaction using self-esteem as mediating variable.

2. Theoretical Background

2.1. Upward Comparison of Facebook Users

In recent years, there has been an abundance of research on the social comparison effect arising from social networking (SNS) use. Social comparison is a psychological process that determines how to evaluate oneself based on information about others (Corcoran, Crusius, & Mussweiler, 2011). Much of the information posted by users through the SNS is for the management of their own image, so the content tends to be positively biased (Jordan, Monin, Dweck, Lovett, John, & Gross, 2011; Lee-Won, Shim, Joo, & Park, 2014). Moreover, SNS users interact with people they met online and offline. Thus, two factors, comparative similarity and a higher level of personal friendship with acquaintances, can further promote social comparison (Appel et al., 2016).

Upward social comparison could lead to negative emotions (Taylor & Shelley, 1993). Of course, people who strive to better themselves make upward comparisons with the goal of improving his or her abilities, but at the same time may run the risk of experiencing disappointment or inability (Jang & Han, 2004). They may end up feeling frustrated, incapable, unhappy (Alicke, LoSchiavo, Zerbst, & Zhang, 1997; Marsh & Parker, 1984; Morse & Gergen, 1970; Wheeler, Martin, & Suls, 1997), deprecating self-evaluation and feelings of inferiority (Marsh & Parker, 1984; Morse & Gergen, 1970; Wheeler, Martin, & Suls, 1997). This is the same in SNS space. SNS users are more likely to experience negative emotions when they are exposed to other people's information in the SNS space (Yang et al., 2014; Lee, 2014).

However, some researchers have found that exposure to other people's information on SNS does not always have a negative impact on their emotions (Buunk, Kuyper, & van der Zee, 2005; Taylor, Wayment, & Carrillo, 1996). It may be mediated or controlled by individual inner factors such as self-esteem, perceived control over the situation, and dissatisfaction (Buunk, Collins, Taylor, VanYperen, & Dakof, 1990). Mai-Ly et al. (2014) also pointed out there is a third factor in Facebook usage that induces negative emotions, suggesting the need to explore them. It depends on the person. For example, if you view people who have a nice life, some may feel a sense of relative deprivation, but others may be inspired to achieve the same success (Yang, 2015). The effect of social comparison will vary according to the Facebook user's social comparison orientation level.

Recent studies show that life satisfaction is positively correlated with upward and similar comparison with others on Facebook whilst downward comparison is negatively correlated with life satisfaction (Mai-Ly et al., 2014).

Based on two studies Keum Hee-jo (2011) and Yang (2015), I examine the effect on life satisfaction as a result of using Facebook for upward comparison with self-esteem as the mediating variable.

2.2. Social Support

Social support is an asset an individual receives through an online or offline social network, including both tangible help and intangible assistance (Stefanone & Kwon, 2012). It is the material and emotional help an individual gets through socially connected relationships, and the recognition of how much help is available when needed (Yang et al., 2012).

In the use of social media, interpersonal communication is important, and seeking advice or help from others is the main motivation for use. In addition, the level of awareness of how people sympathize and identify with their social atmosphere or identity also influences social media commitment. The reason why people communicate with each other through social media is to express their desire for social connection or solidarity and to gain emotional ties and emotional satisfaction (Kim, 2015).

Previous online applications such as chat rooms and forums were designed to facilitate conversations with strangers. Web 2.0 and social media applications are intended to facilitate interaction and communication with a social network. Self-disclosure through SNS encourages people to share with their network information about themselves, their friends and their lives (Ahn, 2011). And in SNS, they elicit more responses about their profiles. Positive responses to self-disclosure in SNS are associated with high self-esteem, and research suggests that high self-esteem is significantly associated with life satisfaction (Valkenburg & Peter, 2009).

In this paper, we investigate if:

1) Facebook users who perceive that they have higher social support will perceive their life satisfaction to be higher and;

2) Good social support affects self-esteem which in turn affects life satisfaction.

2.3. Self-Esteem

Self-esteem can be defined as the motivation to improve and maintain a positive understanding of ego (Aronson, Wilson, & Akert, 2005; Vignoles, Regalia, Manzi, Golledge, & Scabini, 2006). Ego is defined as subjective conception of oneself as an individual (Vignoles et al., 2006). The cues that represent ego in the relationship between oneself and others have different meanings depending on the relationship between individuals or between individuals and groups (Deaux, 1992; Hitlin, 2003; Sedikides & Brewer, 2015).

Digital content posted on Facebook is perceived as extending a person's ego, where the content becomes their identity; that is it is regarded not as "mine" but as "me" (Ferraro, Escalas, & Bettman, 2011; Belk, 1988). People with low self-esteem disclose their information to gain confidence or to gain the praise and social support of others, while those with high self-esteem disclose their information because they think their attitudes or opinions are valuable (Lee & Goa, 2013; Baumeister, 1999). In the modern information age excessive self-expression by high self-esteem persons has the potential to negatively impact the sociality of the online space (Kim & Davis, 2008). It has also been argued that low self-esteem can have a positive impact on social expansion (Ellison, Steinfield, & Lampe, 2007). Thus, the level of self-esteem can influence the method of self-expression on social media.

Therefore, in this study, rather than assuming a simple relationship between upward comparisons and negative emotions, research suggests that individual internal factors such as self-esteem, perceived control over the situation, and dissatisfaction can affect the relationship between the two variables (Buunk, Collins, Taylor, VanYperen & Dakof, 1990). Mai-Ly et al. (2014) pointed out that there is a third variable involved in the use of Facebook which contributes to causing negative emotions, suggesting the need to explore it. The purpose of this study is to confirm that upward comparison and social support will affect life satisfaction mediated by self-esteem.

2.4. Life Satisfaction

In empirical studies, life satisfaction has also been used to measure subjective well-being concepts (Ellison, Steinfield & Lampe, 2007; Jun, Hartwell & Buhalis, 2012; Liu & LaRose; 2008). Life satisfaction can be defined as people's emotional responses, areas of satisfaction, and overall assessments (Diener, Suh, Lucas & Smith, 1999), including both cognitive assessments and some positive and negative feelings (e.g., emotions) (Diener, 1994; Veenhoven, 1984).

As the modern society gradually shifts to a computer-based communication society, the communication environment is also shifting from face-to-face communication to computer mediated communication (CMC) such as instant mes-

sages, online chats, and social media. The result that activity in cyberspace is related to life satisfaction has already been suggested through previous studies. The Internet enhances the self-esteem and overall well-being of the user and ultimately has a positive impact on life satisfaction (Turkle, 2011; Jun, Hartwell & Buhalis, 2012; Liu & LaRose, 2008). Accordingly, this study attempted to confirm how upward comparison with others and social support influence on life satisfaction through mediating self-esteem. The research model is below in Figure 1.

Research Questions

Based on the literature review, I propose the following Research Questions.

Hypothesis 1: Upward comparison with others will affect life satisfaction.

Hypothesis 2: Social support affect life satisfaction.

Hypothesis 3: Upward comparison with others on Facebook mediated self-esteem will affect life satisfaction.

Hypothesis 4: Social support mediated by self-esteem will also affect life satisfaction.

3. Research Methodology

3.1. Data Collection

This study used an Internet survey conducted by Mbrain, an Internet research company, to collect data on male and female Facebook users aged between twenties and fifties living in five metropolitan cities, Seoul, Busan, Daegu, Gwangju and Daejeon. I examined patterns of Facebook use, self-esteem, upward comparison with others, social support, life satisfaction, and other demographic background questions.

3.2. Survey Respondents

The survey sampled 1332 users, and the number of samples by region, gender and age is summarized in Table 1 below.

3.3. Measurement Variables

In this study, the independent variables are social support and upward comparison with others, the mediating variable is self-esteem, and the dependent variable is life satisfaction.

Social support was measured by adapting five questions from Kim (2015) that were originally developed by Zimet et al. (1988).

Upward comparison with others used eight items from Yang, Kim and Seo (2014). Self-esteem was measured by 7 out of 11 questions that Kim Moon-joo (1988) used, which was itself drawn from Rosenberg (1965). Life satisfaction was measured using five items from the study of Cho Mi-hye, Jeon Soo-hyun, and Choi Eun-kyung (2014). The mean and standard deviation of the median, independent and dependent variables measured by gender and age are shown in Table 2.
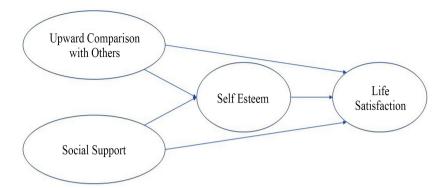
Figure 1. Research Model.

Table 1. Profile of the survey respondents.

	Age Group	Seoul		Pusan		Daegu		Daejeon		Gwangju	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	1332	349	363	110	122	92	84	52	54	52	54
20's	21.8%	80	81	24	26	19	16	11	11	12	10
30's	23.5%	85	91	25	26	21	16	12	11	13	13
40's	27.3%	95	94	28	33	26	24	15	18	15	16
50's	27.4%	89	97	33	37	26	28	14	14	12	15

Table 2. Mean and standard deviation of measurement items by gender and age.

	Gender			
	Male (n = 655)		Female (n = 677)	
	Mean	Standard Dev	Mean	Standard Dev
Self Esteem	4.02	0.79	4.11	0.79
Social Support	4.80	0.97	4.90	1.05
Upward Comparison with Others	3.82	1.21	3.90	1.30
Life Satisfaction	3.86	1.17	3.76	1.19

	Age							
	20's (n = 290)		30's (n = 313)		40's (n = 364)		50's (n = 365)	
	Mean	SD De	Mean	SD	Mean	SD	mean	SD
Self Esteem	3.99	0.84	4.09	0.78	4.12	0.78	4.04	0.78
Social Support	4.93	1.11	4.82	1.01	4.81	0.99	4.85	0.96
Upward Comparison with Others	3.92	1.37	3.91	1.25	3.89	1.21	3.72	1.20
Life Satisfaction	3.80	1.21	3.82	1.15	3.75	1.24	3.86	1.11

3.4. Research Method

In this study, SPSS 19 and AMOS were used for statistical analysis of collected data. To confirm the construct validity of measurement variables, exploratory factor analysis was performed, followed by confirmatory factor analysis. Structural model equation analysis was conducted to identify the direct and indirect effects of upward comparison with others and social support on life satisfaction mediated by self-esteem.

4. Research Results

4.1. Verification of Reliability and Validity of Measurement Variables

An exploratory factor analysis and a reliability test were conducted for the independent variable, upward comparison with others, social support, the dependent variable, life satisfaction and the mediating variable self-esteem. Factor analysis was based on principal component extraction method (Principle Component Extraction) and orthogonal rotation (Varimax), with the optimal factor structure extracted by determining the number of factors with eigen value greater than 1. As shown in Table 3, four factors were extracted. Upward comparison with others with 8 items, self-esteem with 7 items, life satisfaction with 5 items, and social support with 5 items. The eigenvalues for each factor were 6.177, 4.475, 3.900 and 3.664, with a total cumulative explanatory variable of 58.76%. Factor loadings were all greater than 0.6 except for one. This is a very suitable result for factor analysis. The Cronbach's α values, which is the internal consistency reliability coefficients, was greater than 0.8, a very high reliability test result.

In order to verify the validity of measurement variables, structural model equation analysis was performed through confirmatory factor analysis and confirming the relationship between the measurement model and the latent variables in which inappropriate measurement variables are eliminated (Lee & Lim, 2011). Structural equations suggest the goodness of fit of models through chi-square (χ^2) values and RMR, GFI, IFI, TLI, CFI, and RMSEA (Moon Su-Baek, 2009). In this study, confirmatory factor analysis was conducted to verify the validity of the measurement model. The goodness-of-fit index of the model is χ^2 = 3353.77 (df = 454, $p < 0.01$), RMR =0.090, IFI = 0.928, TLI = 0.919, CFI = 0.925, RMSEA =0.061. Therefore, the standard of fitness for the model is acceptable.

In addition, there is concern that the use of a Likert scale for subjectively self-reporting measurement of the variables in this study is prone to common method bias (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). Confirmatory factor analysis was conducted to confirm whether there were problems with this method. I analyzed the measurement model that estimates one potential patent variable with all the measurement variables, χ^2/df = 60.539 ($p < 0.01$), GFI = 387, TLI = 0.372, CFI = 0.427, and RMSEA = 0.212. As a result, the coefficients showed a low standard of fitness and accordingly there is no problem with common method bias.

Table 3. Measurement items' exploratory factor analysis and cronbach α coefficients.

Items	Upward Comparison with Others	Self Esteem	Life Satisfaction	Social Support
1) As I see others accomplish something, I compare it to my relatively miserable situation.	0.802	−0.229	−0.078	0.015
2) When I see someone else's wonderful lifestyle on Facebook, I compare it to my situation when I haven't experienced it.	0.801	−0.180	0.047	0.038
3) I compare myself to other people working so hard, but I am not.	0.801	−0.213	−0.042	0.024
4) I often see other people's superior appearance or physical condition and compare it with my unattractive appearance.	0.799	−0.245	0.080	−0.013
5) I compare myself to others owning luxury items, but I don't have them.	0.793	−0.201	0.130	−0.025
6) I see other people having many good human relationships and compare that to my lack of good relationships.	0.777	−0.234	0.022	−0.054
7) I see other people having happy daily lives and compare that to my not so happy daily life.	0.771	−0.272	0.004	−0.074
8) I compare myself to other people who are very popular, but I am not.	0.762	−0.208	0.077	−0.067
1) Sometimes I think I'm a very useless person.	−0.202	0.812	−0.019	0.184
2) Overall, I seem to be a social failure.	−0.192	0.812	−0.009	0.207
3) I don't have much to boast about.	−0.183	0.772	−0.003	0.121
4) Sometimes I feel unhappy.	−0.257	0.760	0.141	0.129
5) Sometimes I think I'm incompetent.	−0.242	0.732	0.143	−0.058
6) Sometimes I want to be someone else.	−0.199	0.684	0.131	−0.070
7) I don't have anyone understands me fully.	−0.174	0.550	−0.192	0.083
1) The situation in my life is very good (after using Facebook).	0.041	0.052	0.858	0.235
2) (After using Facebook) I've accomplished the important things I want in my life.	0.018	0.051	0.853	0.239
3) (After using Facebook) I'm happy with my life.	−0.001	0.109	0.846	0.241
4) (After using Facebook) Overall my life is close to ideal.	0.078	−0.012	0.826	0.156
5) If I can live my life again (after using Facebook) I will hardly change anything.	0.039	−0.031	0.813	0.050
1) My friends help me a lot.	−0.023	0.107	0.171	0.864
2) I can talk about my worries with my friends.	0.006	0.111	0.137	0.855
3) I have someone to talk to when I am happy or sad.	0.010	0.082	0.214	0.803
4) My family helps me.	−0.066	0.083	0.090	0.771
5) Someone helps me when I need it.	0.013	0.068	0.231	0.756
Eigenvalue	6.177	4.475	3.900	3.664
% variance	19.925	14.435	12.581	11.819
Cumulative variance	19.925	34.360	46.941	58.760
Reliability	0.951	0.892	0.918	0.892

4.2. Hypothesis Test Results Analysis

This study estimates parameters using maximum likelihood estimation, Regression coefficient values are expressed as estimates in Amos and are divided into non-standardized and standardized estimates. It can be concluded that the critical ratio (CR), measured by the p value in general regression analysis, is causal at the 5% significance level for two-tailed tests when the absolute value is greater than 1.96. In the final model, the bootstrap procedure of Shrout and Bolger (2002) was performed to confirm the indirect effect of self-esteem. The results are presented in Table 4 below.

The fitness of the research model was generally acceptable. In this study, $\chi^2 = 2356.709$ (df = 246, $p < 0.01$), RMR =0.082, CFI = 0.930, TLI = 0.923, IFI = 0.932, RMSEA =0.068. It has been shown to meet requirements generally (Hong, 2000). As a result of parameter estimation based on the structural equation model, upward comparison with others ($\beta = 0.147$, $p < 0.01$) and social support ($\beta = 0.432$, $p < 0.01$) have a significant effect on life satisfaction.

Therefore, Hypothesis 1 and Hypothesis 2 were adopted. In other words, people who have a lot of upward comparison with others and receive a lot of social support will have greater life satisfaction. To further examine the direct effects of the variables, upward comparison with others ($\beta = -0.546$, $p < 0.01$) and social support ($\beta = 0.244$, $p < 0.01$) all had a significant effect on self-esteem. Self-esteem had a significant effect on life satisfaction ($\beta = 0.112$, $p < 0.01$). These results indicate that those who upward compare themselves a lot with others have lower self-esteem; the more social support they have, the higher their self-esteem; and the higher their self-esteem, the greater their life satisfaction.

Table 4. Hypothesis test results.

Path		Estimate	Standard Error	C.R.	Standardized coefficient	Hypothesis
Direct Effect	Upward Comparison -> life satisfaction	0.140	.031	4.459**	.147	H1
	Social support -> life satisfaction	0.596	.043	13.833**	.432	H2
	Upward comparison -> self esteem	−0.457	.026	−17.879**	−0.546	H3
	Social support -> self esteem	0.295	.032	9.179**	0.244	H4
	Self-esteem-> life satisfaction	0.127	.040	3.203**	0.112	

Path		Estimate	LCC	UCC	Standardized coefficient	Hypothesis
Indirect Effect	Upward comparison-> self-esteem -> life satisfaction	−0.058	−0.095	−0.027	−0.061	H3
	Social support -> self-esteem -> life satisfaction	0.038	0.018	0.079	0.027	H4

**$p <0.01$, *$p <0.05$.

To further examine the direct effects of the variables, up-comparison with others (β = −0.546, p < 0.01) and social support (β = 0.244, p < 0.01) all had a significant effect on self-esteem. Self-esteem also had a significant effect on life satisfaction (β = 0.112, p < 0.01). These results indicate that those who compare a lot with others have lower self-esteem, the more social support they have, the higher their self-esteem, and the higher their self-esteem, the higher their satisfaction with life.

Next, I examined the hypothesis test for the mediation path, that is, whether self-esteem plays a mediating role in influencing life satisfaction with the independent variables' upward comparison with others and social support. For this, I estimate the standard error of indirect effects using bootstrapping (Shrout & Bolger, 2002). If the confidence interval for indirect values does not contain 0, the indirect effects are considered to exist. The results are shown in Table 4 above. As calculated, self-esteem mediated between upward comparison with others and life satisfaction (β = −0.061, 95% Bias-corrected CI = −0.095 - −0.027); and between social support and life satisfaction (β =0.027, 95%).

In the relationship between Bias-corrected CI =0.018 - 0.079), both paths (Bias-corrected CI = 0.018 - 0.079) did not have zero at the confidence interval which implies there were mediating effects. Therefore, both Hypothesis 3 and Hypothesis 4 were adopted. These results indicate that the higher the upward comparison with others, the lower the self-esteem, which leads to lower life satisfaction; and the greater the social support, the higher the self-esteem which leads to greater life satisfaction.

5. Conclusion and Discussion

This study investigated the effects of Facebook users' self-esteem, social comparison orientation, upward comparison with others and social support on life satisfaction. The research model was found to be plausible and the items of each factor were found to have high reliability and validity. The effects of upward comparison with others and social support on life satisfaction were all significant. Therefore, both hypotheses 1 and 2 were supported, and these results showed that life satisfaction is increased when Facebook users upward compare themselves with others and receive social support. Hypotheses 3 and 4 were also supported, i.e. upward comparison with others and social support would affect life satisfaction mediated by self-esteem.

These results indicate that the more upward comparison with others, the lower the self-esteem, which leads to lower life satisfaction. And secondly, it can also be concluded that the more social support users have will increase self-esteem which leads to higher life satisfaction.

Hypothesis 1 found that upward comparison with others on Facebook will affect life satisfaction. Taylor & Shelley (1993), Jang & Han (2004), Alicke, Lo-Schiavo, Zerbst, & Zhang (1997), Lee (2014) and Yang et al. (2014) reported that upward comparisons with others can cause negative emotions.

In contrast Yang (2015) reported that upward comparisons with others can have an uplifting effect on emotions, inspiring them to hope for the same level of success if they try.

This conflicting view suggests that the results rather could be mediated or controlled by a third factor rather than being unconditionally related to negative emotions (Kim & Kim, 2012).

Hypothesis 2 was also supported, that is, social support affects life satisfaction. And that greater social support received via Facebook leads to higher life satisfaction. These results are consistent with the research of Kim (2015) and Oh, Ozkaya & LaRose (2014), who reported that social support had a positive effect on the subjective well-being of individuals.

Hypotheses 3 and 4 were also supported, i.e. more upward comparison with others will lower the self-esteem, which leads to lower life satisfaction. And that greater social support will increase self-esteem which leads to higher life satisfaction. Other researchers suggest that an individual's internal factors such as self-esteem, perceived control over the situation, and dissatisfaction may affect the relationship between the two variables (Buunk et al., 1990) and Mai-Ly et al. (2014) pointed out a third variable in the use of Facebook could induce negative emotions, suggesting the need to explore it. Likewise, Kim and Kim (2012) found that the upward-comparison with others was not directly related to negative emotions but could be mediated or controlled by a third factor. In addition, further analyses of direct effects among the variables show that the lower the upward comparison with others, the higher the self-esteem which leads to higher life satisfaction; and that the greater the social support, the higher the self-esteem, will lead to higher life satisfaction. In other words, higher self-esteem is related to positive aspects such as personal happiness and life satisfaction, while lower self-esteem is negative such as depression and antisocial behavior (Baumeister, Campbell, Krueger, & Vohs, 2003; Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005).

Mehdizadeh (2010) found that people with low self-esteem and a tendency for grandiose narcissism would express themselves even more on SNS. Ellison et al. (2007) found similar results with low self-esteem people who use SNS more frequently to make up for their lack of offline social relationships.

The results and implications of this study are as follows:

First, this study has no representation bias because it collected data from a sample of males and females in their twenties to fifties from five representative Korean cities.

Second, the validity test and reliability test confirm that the independent variables affect life satisfaction of Facebook users.

Finally, this study deals with the tremendous increase in interest in understanding psychological variables arising from using social networks, especially Facebook, based on our findings, I identified a need to understand third factors which may act as mediating or control variables.

Despite the above implications, this study has the following limitations:

First, most of the measurement items used in this study were drawn from foreign researchers in an environment unrelated to the use of SNS. Future studies should develop and use measurement items suitable for the SNS environment depending on the country being studied. Second, future studies will need to incorporate a broader range of independent, mediating and moderating variables into the research model. It needs to integrate understanding of the psychological effects from online communication via SNS.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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