

The Association with Online Social Media Use: “Self” and Subjective Well-being of Teenagers

Xiaoli Ni*

School of Humanities and Social Science
Xi'an Jiaotong University
Xi'an, China
nixiaolipsy@163.com

Xiaoyi Shao

School of Humanities and Social Science
Xi'an Jiaotong University
Xi'an, China
shao.xiaoyi@foxmail.com

Ran Qu

School of Humanities and Social Science
Xi'an Jiaotong University
Xi'an, China
79096382@qq.com

Dong Zheng

School of Humanities and Social Science
Xi'an Jiaotong University
Xi'an, China
269009947@qq.com

Rui Jia

School of Humanities and Social Science
Xi'an Jiaotong University
Xi'an, China
413354020@qq.com

Abstract—This paper aimed to study about the influence of online social media use. 2390 voluntary teenagers participated this survey, aged from 11 to 28, 1128 males and 1262 females ($M_{age}=18.29$, $SD=3.61$). This paper took online social media use, self-identity and subjective well-being as latent variables, self-esteem as observed variables, to construct a structural equation model and to discuss their association relationship and mechanism. The results showed that the use of social media online had direct and significant positive effects on self-identity and subjective well-being; but negative relationship with self-esteem; at the same time, online social media use, self-identity, self-esteem and subjective well-being had interrelated associations with each other, especially the mediating effect of self-esteem could positively predict subjective well-being.

Keywords—online social media use, self-identity, self-esteem, subjective well-being

I. INTRODUCTION

According to the 41st China Statistical Report on Internet Development released by CNNIC in January 2018, it showed that the number of Chinese netizens reached 772 million, and the age structure was concentrated at 10-39 years old, most of which were students [1]. Studies have shown that students in online social media think that they can get achievement online and feel satisfied with their lives in virtual space [2], thus generating more subjective well-being of students [3]. However, studies have also shown that the use of social media online can deepen depression [4], fragment self-identity [5-7], and hinder self-development [8]. Therefore, it can be seen that the mechanism of online social media in self-development is still unclear. Once it becomes an uncontrollable factor, it will affect “self” health and subjective well-being of students. Based on this, the current study explores the correlation mechanism among students’ self-identity, self-esteem and subjective well-being under the use of online social media.

II. METHOD

A. Participants

2,500 volunteers, but 2,390 participated in the survey at last. The valid rate was 95.60%. There were 1,128 males and 1,262

females. Among them, 431 were middle school students, 356 high school students, 1,401 college students, and 202 graduate students. The range of age was from 11 to 28 years old ($M_{age}=18.29$, $SD=3.61$).

B. Measurements

1) *Online social media use*: Valkenburg and Soeters [9] defined three typical behaviors (information exchange, entertainment and social interaction) of teenagers' use of online social media. In this study, instant messaging, online game, and social platform represented those three behaviors respectively [10]. This questionnaire was self-reported by participants, and it was assessed by a 5-point Likert-type scale from "1= never" to "5= always". The higher the score of one dimension, the higher level of that behavior of online social media use was. The Cronbach's Alpha.628.

2) *Self-identity*: The self-identity status scale was used that was revised by Wang, et al. [11] based on the version developed by Bennion and Adams [12]. Four subscales were set under the whole scale, each of them with a 6-point Likert-type scale, from "1= very inconsistent" to "6= very consistent". The subscale's Cronbach's Alpha of the achievement status was .861, the moratorium status .773, foreclosure status .845, and diffusion status was .777. Each subscale had 16 items, a total of 64 items for four subscales (Cronbach's Alpha .821). The higher the score of one subscale, the more incline to the certain identity status.

3) *Self-esteem*: This current study adopted Rosenberg's self-esteem scale [13]. This scale had 10-items [13-15]. They were scored as a 4-point Likert-type scale ranging from 1 (strongly disagree) to 4 (strongly agree). The higher total score of the scale, the higher level of one's self-esteem was. The Cronbach's Alpha in this study was .815.

4) *Subjective well-being*: According to previous subjective well-being scale research [16], this subjective well-being assessment adopted in the current study was derived from Diener and Diener [17]. The scale included overall subjective well-being (SWB), life satisfaction, positive emotion and

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negative emotion. Overall SWB and life satisfaction both contain 5 items, while positive emotions and negative emotions contain 6 and 8 items, respectively. The overall SWB rating scale was from "1= very unhappy" to "7= very happy". The higher the score, the higher the overall SWB. The life satisfaction scale was scored on a 7-point scale, from "1= strongly disagree" to "7= strongly agree". The higher the score, the higher the satisfaction of life. Both positive and negative emotions were rated on a 7-point scale, from "1= none" to "7= all times". The higher the score, the higher the positive emotion or negative emotion. The Cronbach's Alpha coefficients of four component subscales were respectively .650, .772, .835 and .862.

III. RESULTS

A. Statistical Description and Correlation Analysis

From correlation analysis, the three kinds of online social media use were correlated with identity status, self-esteem, subjective well-being in most cases. From the perspective of different social media use behaviors online, their effect on self-identity status was slightly different, especially the correlation between foreclosure and diffusion status. Information exchange and foreclosure showed a significant negative correlation ($r=-.064$, $p<.01$), indicating that the more frequently the use of online social media for instant messaging, the less inclined to foreclosure; there is a significant positive relationship between entertainment behavior and diffusion status ($r=.043$, $p<.05$), indicating that frequent use of online social media for entertainment would lead to diffusion status of self-identity; social interaction and diffusion also showed a significant positive correlation ($r=.054$, $p<.01$), indicating that the more individuals use social platforms of online social media, the more likely they would lead to self-identity of diffusion status; the three kinds of online social media use on achievement and moratorium were both positive.

B. The Construction of Association Model

As the purpose of this study is not to compare the differences in the influence of gender and age on the use of online social media, self-esteem and subjective well-being under the development of self-identity. Referring to the previous treatment of such demographic variables should be controlled [3], this paper directly introduced gender and age into the measurements, but not shown in the structure, and not discussed in groups.

Except for self-esteem which was a single dimensional variable, three kinds of online social media use, self-identity status and subjective well-being were all constructed by other exogenous variables. Online social media was constructed into a latent variable, and the internal consistency coefficient (Cronbach's Alpha.628) was explained by information exchange, social interaction and entertainment. Based on the previous studies [11, 12, 18, 19], this paper sets self-identity and subjective well-being both as latent variables. The four types of self-identity status (achievement, moratorium, foreclosure, and diffusion) reflected the self-identity status as exogenous variables. Similarly, overall SWB, life satisfaction, as well as positive and negative emotions were used as exogenous variables of subjective well-being.

The indicators of model fitting were as follows: RMSEA=.077<.080; NFI=.918>.900; GFI=.910>.900; IFI=.922>.900; CFI=.922>.900, demonstrating that the model is effective. Although χ^2/df was not reported in this paper, generally, it was less than 3, which could be tolerated in the structural equation model. Because in the case of large sample size, χ^2/df can exceed 3 [20].

From the dimensions of the model, the information exchange behavior contributed the most to the use of online social media (.66), while the entertainment behavior contributed the least (.44). The moratorium had the highest stability of self-identity status (.82), while the diffusion had the most instability of the self-identity status (.50). Overall SWB (.73) can reflect the subjective well-being at the best, and the contribution of life satisfaction and positive emotions to subjective well-being was equally important (.66).

From the overall structure of the model, there were 3 significant direct paths through the use of online social media. The use of online social media positively predicted self-identity and subjective well-being, but negatively predicted self-esteem. Through the connection of self-esteem, due to its positive prediction to self-identity ($\beta=.11$, $p<.001$), and its negative prediction to subjective well-being ($\beta=-.54$, $p<.001$); therefore, under the situation of online social media use, it was added two significant indirect paths (online social media use \rightarrow self-esteem \rightarrow self-identity; online social media use \rightarrow self-esteem \rightarrow subjective well-being) and one sequential associating path (online social media use \rightarrow self-esteem \rightarrow self-identity \rightarrow subjective well-being), namely the mediating roles of self-esteem. The test by bootstrap 2000 times showed that all three mediating effects of self-esteem were significant ($p<.001$). Due to some effects were diluted by the negative effects of self-esteem, the total mediating effect value of the three paths connected by self-esteem was .096. In addition, self-identity directly predicted subjective well-being significantly ($\beta=.22$, $p<.001$); at the same time, under the situation of online social media use, self-identity also played a role in the link with subjective well-being (online social media use \rightarrow self-identity \rightarrow subjective well-being).

IV. DISCUSSION

The results showed that the online social media use positively predict self-identity ($\beta=.25$, $p<.001$), indicating that the online social media use was good to the stability and development of self-identity. Therefore, "self-identity disorder" [21] and "self-identity differentiation" [5, 6] cannot be explained in this path. However, it is not bad that the negative effect had not been tested. On the contrary, its positive prediction to self-identity is the purpose of this current study because it demonstrated that online social media positively affected teenagers in a different way. With popularization of online social media [1], the teenagers recognize the online social media is not always easy addiction [22], and it has many functions through the online of social media of information exchange, social interaction and entertainment features, which would help teenagers achieve the purpose of integration and socialization, and form stable status of one's self-identity. Among the samples, moratorium accounted for the highest frequencies (achievement was the second) indicating that the use of online social media

had the strongest influence on the individuals with the tendency of these two statuses. According to Marcia's classification of four status of identity [23], it can prove that the use of online social media has an "icing on the cake" or "add insult to injury" effect on self-development for whom in the foreclosure and diffusion status. However, for the status of self-identity as a whole, the use of online social media can significantly positively predict self-identity.

Self-esteem is a manifestation of self-concept or self-evaluation [24]. One of the original intentions that why teenagers use online social media is self-compensation brought by the virtual world [25, 26]. Teenagers with low self-esteem often achieve self-satisfaction by re-shaping themselves online [27, 28] to improve their self-value and self-evaluation from others' evaluation. However, in this study, the online social media use had negative prediction to self-esteem ($\beta = -.23$, $p < .001$), and it can be suggested that the more use of online social media, the less self-esteem improvement. As the self-esteem of teenagers with online social media is derived from the online image, the sexual attraction, and the ability to maintain relationships created by their own in the virtual world [3], it actually weakens the social ability of teenagers in real life, and forms a sharp contrast between the self-reality image and the self-online image. In addition, the negative prediction of self-esteem exactly supports the theory of "self-identity differentiation" [3]. Although the role of online social media cannot differentiate the teenagers' self-identity, but it can fragment the teenagers' self-esteem. Therefore, the negative predictive effect of self-esteem is a warning light for teenagers to use social media online.

V. CONCLUSIONS

This study discussed the psychological mechanism of self-identity, self-esteem and subjective well-being in the use of online social media. Through the path analysis of structural equation model, it found that the use of online social media was significantly positive to predict teenagers' self-identity and subjective well-being, but negatively predict to their self-esteem. At the same time, with the online social media use, self-esteem partially mediates through self-identity to positively predict the subjective well-being.

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