

Research on the relationship between college students' use of social networking sites, perceived social support, and core self-evaluation

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Abstract. The rapid development of the internet has led to the rise of social networking sites, which have impacted the psychological health and social adaptation of college students. Existing research shows that the intensity and patterns of social networking site use are closely related to adolescents' core self-evaluations, with perceived social support playing a mediating role in this relationship. This study, based on a questionnaire survey of 231 college students with an average age of 19.5, reveals the intrinsic connection between social networking site use and core self-evaluations. The findings indicate that the intensity and pattern of use significantly affect self-evaluations, and perceived social support partially mediates this relationship.

Keywords: adolescents, social networking site use, perceived social support, core self-evaluations

1. Introduction

With the rapid development of the internet, social networking sites have become an indispensable part of college students' lives. As the primary user group, college students' behaviors on social networking sites have significant impacts on their psychological well-being and social abilities. Therefore, exploring the factors related to these behaviors holds both theoretical and practical significance. However, current research on the relationship between college students' social networking site usage and their psychological state is relatively limited. Most studies focus on the effects of usage intensity and patterns on mental health, with insufficient exploration of the role of perceived social support in this relationship. Given this, the present study will delve into the relationships between social networking site use, perceived social support, and core self-evaluations among college students, aiming to fill the research gap in this area and provide new perspectives and evidence for related theories and practices. This study aims to analyze the intricate relationship among social networking site use, perceived social support, and core self-evaluations, revealing the underlying mechanisms of their influence.

Regarding the definition of social support, it has traditionally been categorized into subjective support felt by the individual and the objective support that can actually be obtained. In the context of the internet, there is also a distinction between online and offline social support. However, as the internet develops, college students' online and offline social circles are closely intertwined, and there is a large overlap between online and offline social support, posing challenges for measurement. Many current studies focus on how to distinguish and measure the two forms of support, but they have found that online and offline social support scales share similar content and basic structures. Using the same scale may lead to high measurement errors, while using different scales is difficult to interpret due to differences in conceptual content [1].

Additionally, research on the factors influencing perceived social support has previously explored whether it is a stable personal trait or a result of environmental changes, proposing an integrated model in which both personal and environmental factors interact. It has been pointed out that individual characteristics play an important role in perceived social support [2-3]. However, existing studies have insufficiently focused on targeted research for students from different types of universities and various academic backgrounds.

The concept of core self-evaluations was proposed by Locke, Durham, and others. As a personality trait, it can predict job satisfaction and job performance. Its lower-level components include evaluative, descriptive, and foundational factors, each with conditional limitations [4]. Early measurement methods had many drawbacks, such as causing fatigue effects in respondents, being time-consuming and inefficient, and not allowing for direct measurement. In cross-cultural applications, domestic research generally uses foreign scales, but due to inconsistencies in cross-cultural structures, results may be biased. For example, differences in cross-cultural adaptation among individuals from different cultural backgrounds can influence measurement outcomes.

In existing research on the relationship between social networking site use and core self-evaluations among college students, it has been found that passive use of social networking sites negatively predicts self-esteem, while active use is positively correlated with core self-evaluations. However, there are still several limitations. Research subjects are mostly concentrated among students from comprehensive universities and normal universities, with less attention given to students from other types of institutions or those with different academic backgrounds, leading to limited generalizability. Most research relies on questionnaire methods, which may be affected by biases such as recall errors or social desirability effects, impacting the accuracy of the results. Additionally, many studies examine the overall relationship between social networking site use and self-evaluations, neglecting the psychological interactions behind specific usage behaviors and their varying effects on individual psychological traits.

This study uses the questionnaire method to investigate the specific behaviors of college students from different types of institutions and academic backgrounds on social networking sites, aiming to explore the mediating role of perceived social support in the relationship between social networking site use and core self-evaluations.

The hypotheses of this study are as follows: First, a comprehensive survey of college students from different types of institutions and academic backgrounds will reveal differences in the relationship between social networking site use, perceived social support, and core self-evaluations across different groups. Second, by analyzing the psychological interactions behind specific social networking site usage behaviors, the study will uncover how these behaviors influence perceived social support and core self-evaluations to varying degrees, thereby revealing a more practical and detailed psychological influence model.

2. Research methodology

2.1. Participants

A total of 231 college students from two universities in Taiyuan and Jinzhong cities, Shanxi Province, were selected as the research participants. This study adopted a completely random sampling method to ensure the representativeness of the sample. The participants, with an average age of 19.5 ± 1.2 years, came from various majors and academic years, ensuring a degree of diversity. A comprehensive questionnaire was used to collect data on their social networking site use, perceived social support, and core self-evaluations. The data collection was conducted through an online group administration method, followed by the exclusion of invalid questionnaires. A total of 243 questionnaires were distributed, and 231 valid questionnaires were returned, resulting in an effective response rate of 95.06%.

2.2. Research tools

Social Networking Site Use Intensity Questionnaire: This questionnaire was based on the Chinese version of the College Students' Social Networking Site Use Intensity Questionnaire, translated by psychological researchers such as Gengfeng Niu. The original English version was developed by Ellison et al. in 2007 and consists of 8 items, utilizing both self-report and five-point Likert scale measurement methods [5]. Raw scores were first obtained and then converted. The Cronbach's alpha coefficient for the questionnaire was 0.833.

Social Networking Site Use Pattern Questionnaire: Foreign psychological researchers have provided operational definitions for active and passive use of social networking sites, and based on this, systematic measurement methods for both active and passive use were developed [6]. The Cronbach's alpha coefficient for the active use scale was 0.83, while the Cronbach's alpha for the passive use scale was 0.84.

Core Self-Evaluations Scale: The Core Self-Evaluations Scale used in this study was revised by psychological researchers such as Jianzheng Du. The internal consistency reliability of the scale reached 0.83, and the construct validity was found to be ideal. These indicators suggest that the scale is suitable for use in survey research.

Social Support Scale: Psychological researcher Zimet and colleagues conducted a series of studies on the structure and measurement methods of social support, proposing a systematic theory [7]. Based on Zimet's theory, Chinese psychological researchers, such as Qianjin Jiang, revised a widely used localized Perceived Social Support Scale. This scale measures support from three dimensions: family support, friendship support, and other support [8]. The Cronbach's alpha for family support was 0.87, for friend support was 0.82, and for other support was 0.90. The overall Cronbach's alpha for the entire scale was 0.90.

3. Results

3.1. Demographic differences in college students' social networking site use, perceived social support, and core self-evaluations

The results of this study indicate that there were no significant differences in the patterns of social networking site use among college students based on gender and age. Regardless of gender or academic year, students tended to engage in active use of social networking sites. Similarly, core self-evaluations did not show significant differences based on gender or academic year, suggesting that core self-evaluations are relatively stable and less influenced by demographic factors. Moreover, there was no

significant impact of different patterns of social networking site use (active or passive) on perceived social support or core self-evaluations.

3.2. Correlational analysis of college students' social networking site use, perceived social support, and core self-evaluations

The results of the correlational analysis are presented in Table 1. There was a significant positive correlation between active use of social networking sites and usage intensity, with a correlation coefficient of $r = 0.274$, $p < 0.01$. This indicates that the more college students engage in active behaviors on social networking sites, the higher their usage intensity. For example, students who actively update their friend lists or post more comments and messages tend to have a higher number of friends and more frequent use. There was also a significant correlation between active and passive use, with a correlation coefficient of $r = 0.217$, $p < 0.01$, suggesting that college students' active and passive behaviors on social networking sites are related. Students who engage in active communication are also likely to engage in passive information browsing to some extent. Active use was significantly correlated with core self-evaluations, with a correlation coefficient of $r = 0.332$, $p < 0.01$. This means that active use of social networking sites is positively associated with core self-evaluations. Active behaviors, such as sharing achievements, can generate social feedback that enhances self-worth and confidence, thereby improving core self-evaluations. Active use was also significantly correlated with perceived social support, with a correlation coefficient of $r = 0.298$, $p < 0.01$. This suggests that active engagement on social networking sites is positively associated with perceived social support. Active interactions allow college students to feel more cared for, helped, and supported, thereby increasing their perception of social support. Usage intensity was significantly positively correlated with core self-evaluations, with a Pearson correlation coefficient of $r = 0.150$, $p < 0.05$. This indicates that the higher the intensity of social networking site use, the higher the core self-evaluation of college students. For example, a higher usage intensity typically corresponds to a broader social circle, more opportunities for interaction, or more chances to display personal strengths and achievements, thus improving self-evaluations. Passive use of social networking sites was also significantly positively correlated with core self-evaluations, with a correlation coefficient of $r = 0.518$, $p < 0.01$. This shows a strong correlation between passive use behaviors and core self-evaluations. Passive use, such as browsing friends' posts, exposes students to others' life statuses and achievements, which may trigger social comparisons. The different outcomes of these comparisons and the resulting psychological satisfaction can influence core self-evaluations in various ways.

Table 1. Correlation analysis of college students' social networking site use, perceived social support, and core self-evaluations

Variable	Core Self-Evaluation	Perceived Social Support	Usage Intensity	Active Use	Passive Use
Core Self-Evaluation	1	0.055	0.150*	0.332**	0.518**
Perceived Social Support	0.055	1	0.150*	0.298**	0.150*
Usage Intensity	0.150*	0.150*	1	0.274**	0.124
Active Use	0.332**	0.298**	0.274**	1	.217**
Passive Use	0.518**	0.150*	0.124	.217**	1

3.3. Regression analysis of college students' social networking site use, perceived social support, and core self-evaluations

Through statistical analysis and correlation testing, it was found that the intensity of social networking site use, perceived social support, and core self-evaluations are all significantly correlated with each other, exhibiting complex relationships. Therefore, mediation analysis can be conducted. This study employs the most widely used stepwise causal regression method. First, regression analysis is conducted for all independent and dependent variables. Then, regression analysis is performed for the independent variables and the mediator variables to demonstrate that the independent variables affect the mediator variables. Finally, the independent and mediator variables are included in the regression equation for analysis. If all three steps are met, it indicates the presence of a mediation effect involving social support, subjective well-being, and positive emotions. If the conditions are not met, it is necessary to determine whether there is partial mediation.

The results of the linear regression analysis are shown in Table 2. There is a significant linear correlation between the intensity of social networking site use and core self-evaluations. The independent variable, usage intensity, can explain the variance in the dependent variable, core self-evaluation ($R^2 = 0.023$). The regression equation is:

$$y = 25.406 + 0.214x \quad (1)$$

This means that within a certain range, higher usage intensity is associated with higher core self-evaluations, as related to factors such as social circles, opportunities for interaction, and opportunities for self-presentation. There is a significant linear

correlation between passive use and core self-evaluations. The independent variable, passive use, can explain the variance in the dependent variable, core self-evaluation ($R^2 = 0.269$). The regression equation is:

$$y = 20.737 + 0.727x \quad (2)$$

Passive use behaviors affect core self-evaluations by influencing comparison psychology and psychological satisfaction. Both usage intensity and passive use jointly explain the variance in core self-evaluations. Multiple linear regression analysis shows that usage intensity and passive use are significantly linearly correlated with core self-evaluations. The independent variables can explain the variance in the dependent variable ($R^2 = 0.276$). The regression equation is:

$$y = 19.458 + 0.727x_1 + 0.214x_2 \quad (3)$$

This indicates that both factors jointly influence core self-evaluations. Both active use of social networking sites and perceived social support have direct effects on core self-evaluations. Multiple linear regression analysis shows that active use, perceived social support, and core self-evaluations exhibit significant multivariate linear correlations. The independent variables can explain the variance in the dependent variable ($R^2 = 0.113$). The regression equation is:

$$y = 23.365 + 0.398x_1 - 0.017x_2 \quad (4)$$

This shows that both active use and perceived social support have direct effects on core self-evaluations, with perceived social support acting as a mediator between active use and core self-evaluations. Through active use, individuals gain social support, which in turn enhances their self-evaluations.

Table 2. Regression analysis of college students' social networking site usage intensity, active use, passive use, and core self-evaluations

Outcome Variable	Predictor Variable	R	R ²	F	B	t
Core Self-Evaluation	Usage Intensity	0.150a	0.018	5.296	25.406	22.949
Core Self-Evaluation	Passive Use	0.518a	0.269	84.124	0.518	9.172
Core Self-Evaluation	Active Use	0.332a	0.110	28.439	0.382	5.333

4. Discussion

This study selected 231 college students from two universities in Taiyuan and Jinzhong cities, Shanxi Province (with an age range of 19.5 ± 1.2 years, covering various majors and academic levels) as the research subjects. The study used a completely random sampling method to ensure the representativeness of the sample. Comprehensive questionnaires were distributed to collect data on their social networking site usage, perceived social support, and core self-evaluations. The data were then analyzed. The main findings revealed a positive correlation between the intensity of social networking site use and core self-evaluations. There was also a significant positive correlation between active use and usage intensity, and active use and passive use were mutually related. Regarding social networking site usage patterns, both passive use and active use were specifically correlated with core self-evaluations, with perceived social support acting as a mediator between active use and core self-evaluations. Overall, these results reveal various psychological characteristics and interrelationships involved in college students' use of social networking sites, which are of significant importance for gaining a deeper understanding of college students' social behaviors and psychological conditions.

4.1. College students' social networking site usage characteristics

This study found that the development of the internet has led to social networking sites occupying a significant position in the lives of college students, greatly changing their social behaviors and leading them to develop more diversified and personalized social patterns. This differs from some previous research findings [9-10]. The reason for this discrepancy is that the internet has endowed social networking sites with characteristics such as convenience, diversity, and interactivity, providing college students with broader social platforms and more social opportunities. As a result, they are able to interact through various means, such as actively posting updates, commenting, and browsing others' information, moving beyond traditional social modes.

Additionally, some of the participants in this study were from university towns, where students tend to have more open-minded views, an active social atmosphere, and greater social needs. Moreover, factors such as different academic backgrounds also influenced their usage patterns and psychological traits on social networking sites, which distinguishes them from previous research samples. For example, students majoring in the humanities are more likely to share literary works, art, and other related content on social networking sites due to their academic interests and hobbies, whereas students in science and engineering tend to focus more on technological news and academic research information, showing different preferences in their use of social networking sites.

However, in terms of perceived social support and core self-evaluation, despite the changes in students' social behaviors due to the internet, their performances in these two aspects remained relatively stable. This is consistent with the findings of previous studies [11-13]. The primary reason is that perceived social support depends more on the quality of relationships with family, friends, and others, as well as their own expectations and needs for support. Core self-evaluation, on the other hand, is mainly influenced by internal factors such as personal personality, values, and life experiences, making it less affected by changes in external social behaviors. For instance, when college students face academic pressures or interpersonal relationship issues, the emotional connections and support from significant others tend to remain stable. This stable relationship supports their perception of social support and helps maintain a relatively stable self-concept.

Furthermore, the study found no significant differences in perceived social support and core self-evaluation between students from different universities, which is also consistent with previous research findings [14-17]. This is because college students from different universities are generally at similar life stages, facing similar pressures from academic work, social needs, and future planning. These common factors lead to similar characteristics in their perceived social support and core self-evaluation. For example, whether they are from comprehensive universities or teacher-training colleges, students facing academic difficulties or interpersonal relationship issues need support and encouragement from family, friends, and peers to maintain a positive mental state and a correct self-concept.

4.2. Analysis of the positive correlation between social networking site usage intensity and core self-evaluation

This study shows that there is a significant positive correlation between college students' active use of social networking sites and their usage intensity. This finding is highly important and fills a gap in the in-depth exploration of the relationship between these two variables. Specifically, the more active the use of social networking sites, the higher the corresponding usage intensity. For example, students who frequently update their friend circles, actively comment, and leave messages tend to show higher levels of usage intensity, as reflected in their larger number of friends, more frequent usage, and other indicators of usage intensity.

From the perspective of subjective intention, college students who actively use social networking sites are more likely to use this platform for social interaction. By presenting themselves and establishing connections with others, they are willing to invest more time and energy, which in turn increases the intensity of their social networking site usage. From the standpoint of related research, self-presentation is not only a major motivation for using social networking sites, but also an activity that users frequently engage in on the platform. The self-presentation behaviors performed by students during active use can effectively enhance interaction and communication, further increasing usage intensity. Moreover, there is also a significant correlation between active and passive use, suggesting that these two behaviors are not independent but rather influence each other. Active use behaviors tend to trigger passive browsing behaviors, and conversely, the process of passive browsing may also motivate students to engage more actively in interactions. This is because activities on social networking sites are a continuous process, where different behaviors interact with each other.

Furthermore, this study clearly identifies a significant positive correlation between social networking site usage intensity and core self-evaluation, which holds important value for a deeper understanding of college students' psychological conditions. When students exhibit higher levels of usage intensity on social networking sites, it means they are able to establish broader social circles and more interaction opportunities. These factors can enhance their sense of social connectedness and belonging, thereby boosting their core self-evaluation [18]. For example, when students have higher usage intensity on various aspects of social networking sites, they can more easily establish close connections with others, share moments of their lives freely, and receive recognition and support from others. This, in turn, enhances their self-confidence and sense of self-worth. Additionally, frequent use of social networking sites provides students with more opportunities to showcase their strengths and achievements, allowing them to gain recognition and praise from others. This undoubtedly encourages students to make more positive self-evaluations. Moreover, self-presentation on social networking sites has a positive impact on self-esteem, which helps improve self-evaluation. All these factors collectively contribute to the improvement of core self-evaluation.

4.3. Analysis of the relationship between social networking site usage patterns and core self-evaluation

In this study, while exploring the relationship between college students' use of social networking sites and their core self-evaluation, we discovered that different usage patterns are associated with distinct outcomes.

Regarding the relationship between passive use and core self-evaluation, the study found a strong correlation between passive use of social networking sites and core self-evaluation. This result further deepens our understanding of the relationship between these two variables. When students engage more in passive use of social networking sites, such as merely browsing others' updates, their core self-evaluation is influenced [19]. This influence manifests in two ways: On one hand, the process of passive browsing exposes students to the lifestyles and achievements of others, triggering comparative thoughts that directly affect their self-evaluation. For instance, when students see others' strengths, they may feel inferior, leading to a lower self-evaluation. Conversely, when they encounter others who are similar to themselves or in a worse situation, their self-evaluation may improve. On the other hand, passive use of social networking sites may serve as a way for students to relax or escape from the pressures of reality. If they derive a certain level of psychological satisfaction from this activity, it positively influences their self-evaluation. However, if they

feel anxious or lonely during the browsing process, it could lower their self-evaluation. This is evident in the varying self-evaluation changes that students experience when browsing social networking sites in different emotional states.

In the relationship between active use, perceived social support, and core self-evaluation, this study clearly presents a significant positive correlation between active use of social networking sites and both core self-evaluation and perceived social support, making an important contribution to the field. When students actively use social networking sites, sharing their achievements, hobbies, and other content, they receive various forms of social feedback, such as likes, comments, and encouragement from friends. These responses enhance their sense of self-worth and confidence, thereby improving their core self-evaluation [20]. Moreover, active use of social networking sites strengthens the interaction between students and others, allowing them to more tangibly feel the care, help, and support from others, which enhances their perception of social support. This positive impact is clearly reflected in common scenarios of interaction on social networking sites. It is especially noteworthy that perceived social support acts as a mediator between active use of social networking sites and core self-evaluation. By using active engagement on social networking sites to present themselves, students gain more social support, which in turn boosts their self-esteem, self-efficacy, and ultimately leads to a higher and more positive self-evaluation. This further reveals the underlying mechanisms of interaction between these three factors and provides strong support for related research.

5. Conclusion

This study, using a research paradigm that combines questionnaire measurement and data analysis, investigated the relationship between college students' use of social networking sites, perceived social support, and core self-evaluation, based on a sample of 231 students from two universities in Taiyuan and Jinzhong, Shanxi Province. The research findings indicate that there is a significant positive correlation between the intensity of social networking site usage and core self-evaluation. The two usage patterns—passive use and active use—have distinct effects on core self-evaluation, with perceived social support acting as a mediator in the relationship between active use and core self-evaluation. This suggests that college students' usage behaviors on social networking sites and the social support experiences they gain from these platforms play an important role in shaping their self-cognition. The partial mediating role of perceived social support in the relationship between social networking site use and core self-evaluation is key to understanding this complex relationship and represents the most significant finding of this study. Such research provides a comprehensive understanding of college students' psychological traits and interrelations in the social networking environment, offering valuable insights for university educators on guiding students in the proper use of social networking sites, as well as for social networking site developers to optimize features and services.

6. Limitations and future research directions

This study has certain limitations, and future research can explore more detailed aspects of specific usage behaviors. For example, it could focus on the behavior of displaying achievements in students' social circles, investigating its impact on social support and core self-evaluation. By focusing on specific behaviors, future studies can more precisely uncover the intrinsic link between social networking site usage and psychological aspects, thereby constructing more detailed and realistic psychological impact models.

In terms of data collection methods, future studies could consider using experimental methods to investigate social networking site usage behaviors in a controlled environment. By conducting experiments in a laboratory setting, researchers can collect more accurate data. Experimental methods allow for more precise control and measurement of study variables, and by creating specific experimental situations to simulate students' behaviors on social networking sites, researchers can directly observe and record related behaviors and corresponding psychological reactions.

Additionally, future research could further explore whether different types of social networks (such as face-to-face social interactions, online social interactions, etc.) have varying impacts on students' mental health. More sophisticated methods, such as machine learning, could also be employed to explore the relationship between mental health and social networks in greater depth.

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