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Effects of SNSs use and social intelligence on users' subjective well-being

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Abstract

Purpose – Given the widespread use of social networking sites (SNSs) in modern society, both academic researchers and practitioners have focused on exploring the impact of SNSs usage on users' psychological and behavioral outcomes. However, the connection between SNSs use and users' mental health remains unclear, with inconsistent results in existing literature. This research aims to fill this gap by investigating the link between SNSs use and users' subjective well-being, with a particular focus on the mediating role of three types of social intelligence.

Design/methodology/approach – This study utilizes multivariate techniques, including SPSS and partial least squares structural equation modeling with SmartPLS software, to analyze data from a sample of 299 users across various SNSs in Vietnam.

Findings – The results reveal that SNSs use positively impacts users' subjective well-being. Furthermore, the three types of social intelligence—social information processing, social skills and social awareness—act as separate mediators in the nexus between SNSs use and subjective well-being.

Originality/value – This study makes valuable contributions to both academic research and the business management of SNSs platforms by explaining the relationships among SNSs use, social intelligence and users' subjective well-being. In particular, the mediating role of the three types of social intelligence offers deeper insights into the complex relationship between SNSs use and users' psychological well-being. The findings provide new evidence on how SNSs use enhances users' subjective well-being through social intelligence.

Keywords SNSs use, Social intelligence, Social information processing, Social skills, Social awareness, Subjective well-being

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1. Introduction

The world has witnessed a boom in the internet and advanced technology in the last few decades. This has rapidly driven the emergence of virtual network platforms, known as "social networking sites" (SNSs). These platforms allow users to interact and build social relationships

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with a wide range of people (Bruggeman *et al.*, 2019). With their unique characteristics, SNSs have attracted millions of users worldwide to create profiles and engage on these platforms (Dang, 2021). As a result, academic scholars and business managers have been particularly interested in SNSs and conducted research on their impact on users (Chai *et al.*, 2019). The findings of such research can help SNSs companies design websites and applications to attract new users and retain existing ones (Nisar and Whitehead, 2016). Additionally, such research can also assist business managers in understanding consumer behavior and providing products and services tailored to the needs of individual consumers on SNSs (Bruggeman *et al.*, 2019).

Because SNSs are extremely popular today, they have been integrated as an essential part of many people's daily lives (Dang, 2021). Numerous researchers have explored the factors that impact users' behavior on SNSs (Chai *et al.*, 2019) and the psychological outcomes of SNSs usage (Ansari *et al.*, 2024). Although SNSs usage offers several benefits, such as social relationship, social interaction and entertainment, whether it improves users' psychological health and well-being remains a question in the current literature (Yang and Feng, 2024). Researchers and policymakers are highly interested in this issue because it provides valuable insights for them to come up with appropriate policies to manage SNSs and enhance users' physical and psychological health (Dang, 2021). As a result, researchers have emphasized the importance of users' psychological health when engaging with SNSs (Ansari *et al.*, 2024). One major line of research in the SNSs literature has focused on examining the nexus between SNSs usage and users' psychological well-being (Zhang *et al.*, 2023).

Some scholars have conducted systematic reviews and meta-analyses to examine the impact of SNSs usage on users' well-being. For example, Ansari *et al.* (2024) analyzed 51 studies and concluded that previous studies have reported conflicting findings regarding the effect of SNS usage on users' well-being. Similarly, Yang and Feng (2024) carried out a meta-analysis of 73 studies and reached a conclusion that the influence of SNSs usage on users' well-being remains unclear in the existing literature. The systematic reviews of Parry *et al.* (2022), Valkenburg (2022) and Kross *et al.* (2021) further confirmed the inconsistent findings regarding the nexus between SNSs usage and users' well-being. More specifically, some studies have found a positive impact of SNSs usage on users' psychological health. For instance, Dang (2021) indicated that SNSs usage improves users' social life satisfaction. The studies by Bhatiasevi (2024) and Zhang *et al.* (2023) also reported a positive influence of SNSs usage on users' subjective well-being. In contrast, many other studies have claimed a negative relationship between SNSs usage and users' psychological health. For example, Valkenburg *et al.* (2022) found that using SNSs leads to a decrease in well-being. The findings of Kurten *et al.* (2025) and Schemer *et al.* (2021) also showed that users experience lower levels of life satisfaction when using SNSs. Therefore, the mixed findings in the current literature reflect an unsolved research gap that needs to be further clarified (Ansari *et al.*, 2024; Dang, 2021). The recent systematic reviews by Ansari *et al.* (2024) and Yang and Feng (2024) call for more research from different perspectives using new research model with different mediating and/or moderating variables to provide new insights to the impact of SNSs usage and users' psychological well-being.

In addition, Vietnam is a transitional market in the Southeast Asia. With the rapid growth of the economy and the increase in consumer purchasing power over the last few decades (Nam and Heshmati, 2024), Vietnam has become a significant potential market for many high-tech companies, including Facebook, YouTube, Google, TikTok and other SNSs firms (Le *et al.*, 2024). According to a market report by Statista (2024), Vietnam has more than 70 million active social media users, with nearly 90% of Vietnamese Internet users use Facebook and other SNSs. Although Vietnam represents a very large market for SNSs, research on the impact of SNSs usage on users' psychological well-being in this country has been scarce (Dang-Van *et al.*, 2024). This lack of research provides very little knowledge about the psychological health of users in Vietnam when using SNSs. Understanding this issue will have implications for researchers, business managers and policymakers in Vietnam to develop appropriate policies and strategies that positively affect users (Dang, 2021; Nguyen *et al.*, 2024a). Thus,

more research is necessary to gain a deeper understanding of the effect of SNSs usage on users' psychological well-being in the specific context of Vietnam (Nguyen *et al*., 2024a, b).

To address the important research gap of conflicting results in previous studies and respond to the calls of Ansari *et al*. (2024) and Yang and Feng (2024), this study investigates the nexus between SNSs usage and users' subjective well-being, with the mediating role of three types of social intelligence in the specific context of Vietnamese market. Based on the subjective well-being theory (Diener, 1984), SNSs use is considered a positive factor that helps users develop and cultivate different types of social intelligence, including "social information processing", "social skills" and "social awareness", thereby enhancing their sense of satisfaction and happiness with their social lives. Social intelligence, along with emotional intelligence and intellectual intelligence, is a key aspect of human intelligence (Elbirou, 2024). Social intelligence reflects the ability to interact and communicate effectively in social contexts (Ebrahimpoor *et al*., 2013; Kihlstrom and Cantor, 2000). This concept has been discussed and studied in the field of psychology. However, none of prior studies have explored social intelligence within the SNSs environment. Therefore, this study considers social intelligence as a potential mediating variable and examines how the three types of social intelligence mediate the relationship between SNSs use and users' subjective well-being. By doing so, this study contributes to the current literature by proposing and testing a new research model with the mediating mechanisms of different types of social intelligence. These mediating mechanisms have not been determined in prior studies. This study provides new insights to our understanding of the complex influence of SNSs use on users' psychological health.

2. Theoretical background and hypotheses

2.1 Subjective well-being theory

"Subjective well-being" theory is a significant theory in psychology and sociology. The feeling of "subjective well-being" is the core element of this theory, referring to an individual's evaluation and emotional response to life and specific aspects or activities within it (National Research Council, 2014). Researchers like Diener *et al.* (1985) provided definitions, scope and measurement for the concept of "subjective well-being". It refers to the feeling of joy, satisfaction and positive emotions towards one's social life. In other words, it is a person's subjective assessment and emotional experience in his/her social life (Diener, 1984; Diener *et al*., 1985)

According to Diener (1984), "subjective well-being" refers to people's subjective feeling and evaluation of happiness and satisfaction. It reflects both physical and mental health. People's well-being is often affected by both external and internal factors, with positive factors typically enhancing well-being and negative factors reducing it (Diener *et al*., 1985). Based on the "subjective well-being" theory, using SNSs is considered a positive factor that enhances users' happiness and social life satisfaction (Dang, 2021; Zhang *et al*., 2023). When using SNSs, users engage in various forms of social communication and interaction, as SNSs are social platforms. This helps develop users' abilities to acquire and process social information (i.e. social information processing), interact and communicate with others (i.e. social skills) and empathize and share with others (i.e. social awareness). These social abilities (i.e. social intelligence) increase users' evaluation and feeling about their social lives. In other words, users tend to be more satisfied and happy with their social lives because they learn and develop social abilities through interaction and communication on SNSs. Thus, this study considers SNSs use as an important positive factor that fosters users' social intelligence, which, in turn, contributes to their subjective well-being.

2.2 SNSs use

The concept of SNSs use has been defined differently in previous studies, and there is still no common definition (Parry *et al*., 2022; Valkenburg, 2022). From the perspective of social media involvement, SNSs use is defined as the behavior of participating in and using SNSs,

with the consumption of time and effort by users (Dang, 2021). It reflects users' perceptions, feelings and behaviors, such as the perceptions of the importance, interest, relevance, meaning and value of using SNSs (Zaichkowsky, 1985; Dang, 2021). The scope of SNSs use is relatively broad and diversified, encompassing various aspects and activities (Brailovskaia and Margraf, 2024; Marttila *et al.*, 2021). Previous studies have explored various behaviors on SNSs, such as information and knowledge sharing behavior, violent and bullying behavior, entertainment behavior, business and shopping behavior and addictive behavior (Zhang *et al.*, 2024). The use of SNSs and its impact on users' psychology and behavior has received significant attention from academic researchers, policymakers and business managers (Dang, 2021; Jarman *et al.*, 2024). Review studies by Parry *et al.* (2022), Valkenburg (2022), Kross *et al.* (2021) and Appel *et al.* (2020) show that current studies have yielded mixed results, including both positive and negative impacts of SNSs usage on users' psychology and behavior. Therefore, this study will discuss and examine SNSs usage and its effect on users' subjective well-being.

2.3 Social intelligence

"Social intelligence" is a multifaceted concept that comprises three main components: "social information processing", "social skills" and "social awareness" (Kihlstrom and Cantor, 2000; Sacco *et al.*, 2016). The concept of "social information processing" reflects the ability to acquire and process social information. "Social skills" refers to the ability and skills to communicate and interact effectively with people in society. "Social awareness" involves the ability to empathize, feel and share with others in society (Ebrahimpoor *et al.*, 2013; Gini, 2006). Social intelligence is a key concept in the field of psychology. Researchers in this field have primarily concentrated on defining and measuring social intelligence, as well as examining its connection to other forms of intelligence, such as "emotional intelligence" and "intellectual intelligence" (Hughes *et al.*, 2009; Lievens and Chan, 2017; Weis and Süß, 2005). In this study, these three types of social intelligence will be examined as mediators in the nexus between SNSs usage and subjective well-being of SNSs users.

2.4 SNSs usage and users' subjective well-being

In today's virtual environment, SNSs are considered comprehensive social platforms that offer various features, providing different values and benefits for users. For example, SNSs enable users to connect, interact and communicate with friends worldwide, without being restricted by geographical distance or time (Dang, 2021). SNSs also allow users to share and access diverse information and valuable knowledge. Additionally, users can search for and enjoy entertainment on SNSs platforms (Gao *et al.*, 2023).

Earlier research has demonstrated that using SNSs leads to greater satisfaction and happiness with users' social lives. For example, Dang (2021) discovered that sharing and accessing information on social media enhances users' satisfaction with their social life. Similarly, Wirtz *et al.* (2021) and Zhang *et al.* (2023) found that through social media, users can engage in activities they enjoy, such as shopping, entertainment, connecting with friends and experiencing many other things, which brings satisfaction and happiness to their lives. Therefore, based on previous studies, it can be inferred that SNSs, with their various functions, provide different values to users, thereby enhancing their subjective well-being. This study forms the hypothesis as follows.

H1. SNSs use enhances users' subjective well-being.

2.5 Mediation of different types of social intelligence

Social intelligence often reflects an individual's ability to solve problems in social communication and interactions (Ebrahimpoor *et al.*, 2013). In everyday life, social communication is an essential part of our lives. Social relationships often dominate and

deeply influence each person's experiences (Hughes *et al.*, 2009). For example, we interact and communicate daily with relatives, friends, colleagues and others around us. These interactions affect our cognition, perception, emotion and behavior to varying degrees (Crisp *et al.*, 2024). In the process of social interaction and communication, we need to receive and process various types of information, learn and demonstrate social communication skills and also form our emotional connections with those around us (Lievens and Chan, 2017; Weis and Süß, 2005). People with strong social intelligence are skilled at receiving and processing social information and demonstrating effective communication and interaction skills. Furthermore, good social intelligence is also shown through an individual's ability to recognize, empathize with and understand others in their social environment (Gini, 2006; Sacco *et al.*, 2016). With the ability to process information, communicate, interact, empathize and understand others, individuals with high social intelligence typically form strong social relationships and receive affection of those around them. This, in turn, often leads to feelings of joy and happiness. In other words, social intelligence contributes to a sense of well-being and satisfaction with social life.

Social intelligence is not only reflected in real-life social interactions but also in the virtual world (Bonesso *et al.*, 2020). In the social networking environment, using SNSs will help users enhance their social intelligence in several ways. First, social networks are considered a virtual world where individuals can freely share, interact and communicate. Because users can participate and share openly on SNSs, the amount of information and knowledge exchanged is vast, diverse and rich (Dang, 2021). As a result, when engaging with SNSs, users have the opportunity to receive and process a wide range of information from various sources. Through this process, users gradually improve their information processing abilities, such as the capacity to search for, identify and evaluate information (Shi *et al.*, 2018). Thus, using social networks enhances the ability to process social information, which is a key component of social intelligence.

Second, SNSs are not constrained by geographical distance or time, allowing users to easily seek out, connect with and build relationships with people around the world (Zhang *et al.*, 2020). The primary purpose of social networks is to serve as platforms for communication and interaction (e.g. Facebook, Instagram, Zalo or TikTok), enabling users to freely engage in interactive activities, communication and other social experiences. By participating in such activities, users develop better abilities and skills in interacting with others. In other words, frequent contact, interaction and communication with relatives, friends, colleagues and other people on SNSs help users enhance their social skills (Gao *et al.*, 2023). Thus, using SNSs improves users' social skills, the second key component of social intelligence.

Third, through the use of SNSs, users can easily receive information and communicate with a variety of people, giving them the opportunity to learn more about the circumstances and lives of others. Social interaction and communication also help users expand their knowledge and awareness of the surrounding society, thereby fostering a greater understanding and sympathy for others (Godard and Holtzman, 2024). For example, users can often learn about the challenges faced by others in society, as well as the daily lives of friends and acquaintances, through SNSs. This exposure can increase users' awareness of societal issues, leading to greater empathy and a willingness to share with those around them (Alloway *et al.*, 2014). Thus, using SNSs enhances users' social awareness, the third component of social intelligence.

Subjective well-being theory states that feelings of happiness and joy are often influenced by both internal and external positive factors (Diener, 1984; Fabian, 2022). Based on this theory and the arguments above, it can be inferred that using SNSs promotes and enhances users' social intelligence. As a positive factor promoting emotions and behaviors, good social intelligence is likely to lead users to feel more satisfied and happier with their social life, as SNSs help improve their information processing abilities, communication skills and social awareness. Therefore, social intelligence is hypothesized to serve as a mediating factor in the link between SNSs use and users' subjective well-being. This study forms the hypotheses as follows.

H2. Social information processing plays a positive mediation in the link between SNSs use and users' subjective well-being.

H3. Social skills play a positive mediation in the link between SNSs use and users' subjective well-being.

H4. Social awareness plays a positive mediation in the link between SNSs use and users' subjective well-being.

The conceptual model and hypotheses about the link between research variables are indicated in Figure 1.

3. Methodology

3.1 Measures and questionnaire design

The research model's variables are all referenced from previous studies, and the scales for these variables were taken from existing studies. Specifically, the scale for SNSs use, consisting of 10 items, was taken from Zaichkowsky's (1985) study, which has been re-tested for high reliability and validity in Dang's (2021) study. The scales for social intelligence, including "social information processing" (seven items), "social skills" (seven items) and "social awareness" (seven items) were taken from Gini's (2006) study, which have been re-tested for high reliability and validity in Ebrahimpoor *et al.*'s (2013) study. The scale for subjective well-being, consisting of five items, was taken from Diener's (1984) study. The constructs and their corresponding items are presented in Table 1 in the results of the measurement model.

We used a quantitative research method with a survey to collect sample data. The survey was designed by translating all items between English and Vietnamese using a backward translation method. Since the original scales were taken from studies in the Western context, a pilot test was conducted with 133 respondents to ensure the accuracy and suitability of the scales in the Vietnamese context,. The initial results from the exploratory factor analysis showed that social skills had 4 items with factor loadings less than 0.40, while social awareness had 3 items with factor loadings less than 0.30. The remaining variables all had factor loadings greater than 0.70 and Cronbach α greater than 0.70. After confirming the accuracy of the semantics and translation of the scale, we removed items with low factor loadings and proceeded with formal data collection.

3.2 Sample data collection procedure

The survey respondents in this study were SNSs users in Vietnam. Due to the absence of a population frame and the difficulty in identifying the research subjects through random sampling, convenience sampling was the most feasible option. Electronic questionnaires were

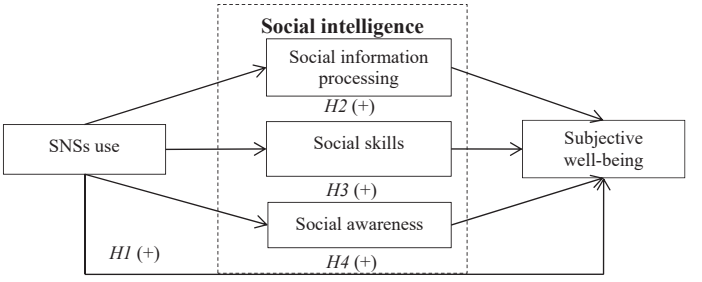


Figure 1. Research model. Source: Authors' own work

Table 1. Measurement model results

Constructs and items	Loadings
SNSs use Zaichkowsky (1985), Dang (2021)	
CR = 0.955, AVE = 0.681, α = 0.948	
"To me, using SNSs is:"	
1. "®Important __:__:__:__:__:__:__ Unimportant"	0.828
2. "Boring __:__:__:__:__:__:__ Interesting"	0.771
3. "®Relevant __:__:__:__:__:__:__ Irrelevant"	0.804
4. "®Exciting __:__:__:__:__:__:__ Unexciting"	0.874
5. "Means nothing to me __:__:__:__:__:__:__ Means a lot to me"	0.851
6. "®Appealing __:__:__:__:__:__:__ Unappealing"	0.841
7. "®Fascinating __:__:__:__:__:__:__ Mundane"	0.818
8. "Worthless __:__:__:__:__:__:__ Valuable"	0.838
9. "®Involving __:__:__:__:__:__:__ Uninvolving"	0.810
10. "Not needed __:__:__:__:__:__:__ Needed"	0.814
Social information processing Gini (2006), Ebrahimpoor *et al.* (2013)	
CR = 0.942, AVE = 0.698, α = 0.928	
1. "I can predict other people's behavior."	0.787
2. "I know how my actions will make others feel."	0.848
3. "I understand other people's feelings."	0.861
4. "I understand others' wishes."	0.890
5. "I can often understand what others are trying to accomplish without the need for them to say anything."	0.838
6. "I can predict how others will react to my behavior."	0.824
7. "I can often understand what others really mean through their expression, body language, etc."	0.797
Social skills Gini (2006), Ebrahimpoor *et al*. (2013)	
CR = 0.905, AVE = 0.763, α = 0.843	
1. "I fit in easily in social situations."	0.931
2. "I am good at entering new situations and meeting people for the first time."	0.922
3. "I am good at getting on good terms with new people."	0.755
Social awareness Gini (2006), Ebrahimpoor *et al.* (2013)	
CR = 0.865, AVE = 0.616, α = 0.793	
1. "Other people become angry with me without me being able to explain why." ®	0.705
2. "I find people unpredictable." ®	0.739
3. "I have often hurt others without realizing it." ®	0.870
4. "I am often surprised by others' reactions to what I do." ®	0.816
Subject well-being Diener (1984)	
CR = 0.916, AVE = 0.687, α = 0.887	
1. "In most ways my life is close to my ideal."	0.730
2. "The conditions of my life are excellent."	0.874
3. "I am satisfied with my life."	0.895
4. "So far I have gotten the important things I want in life."	0.813
5. "If I could live my life over, I would change almost nothing."	0.824

Note(s): ® = reversed item
Source(s): Authors' own work

distributed to various users on SNSs such as Facebook, TikTok, Zalo and other SNSs in Vietnam. Since we adopted a convenience sampling method to approach SNSs users, we did not use any filter questions. All SNSs users were eligible to participate in the survey. Participants were invited to join the survey on a voluntary basis. A total of 416 users were conveniently approached and invited by the researchers. The survey was conducted from April to May 2023. We received 328 questionnaires, of which 299 forms were valid, resulting in a response rate of 71.88%. Twenty-nine questionnaires were invalid and discarded because respondents provided incomplete answers or identical values for all questions.

The sample data shows that, among the total of 299 respondents, 176 were male (58.9%) and 123 were female (41.2%). In terms of age distribution, 42 were under 20 years old (14.0%), 124 were between 21 and 30 years old (41.5%), 33 were between 31 and 40 years old (11.0%) and 100 were 41 years old or older (33.4%). Regarding educational level, 107 were high school or below (35.8%), 180 were college and university (60.2%) and 12 were postgraduate or higher (4.0%). In terms of SNSs usage duration, there were 2 people using SNSs for less than 3 years (0.7%), 33 people using from 3 to 5 years (11.0%) and 264 people using for more than 5 years (88.3%).

3.3 Analysis methods

We adopted SPSS software to process raw data, analyze descriptive statistics and conduct exploratory factor analysis. Additionally, we employed SmartPLS to perform a "confirmatory factor analysis" and assess all hypotheses using "structural equation modeling" (SEM). As suggested by Hair *et al.* (2020), PLS-SEM provides more accurate results when processing models with complex relationships, particularly in cases of small sample sizes and violations of the normal distribution assumption. Since the sample size in this study is relatively small ($n = 299$), we used PLS-SEM to analyze the model and test hypotheses.

4. Research results

4.1 Testing common method variance and non-response bias

Before analyzing the data, we tested for "common method variance" (CMV). The CMV problem arises because data for all variables are gathered from the same respondents at a single point of time, which can distort the analysis results. A "Harman's one-factor test" was performed using "exploratory factor analysis" (Podsakoff *et al.*, 2003). This test indicates that the initial factor explained 29.90% of the total variance, which is below the suggested value of 50% (Podsakoff *et al.*, 2003). Additionally, as suggested by Simmering *et al.* (2015), a "marker variable" test should be used to detect the CMV problem. Accordingly, a marker variable should not be theoretically and statistically related to any research construct. In this study, we used the marker variable of "blue attitude", with four items from Miller and Chiodo (2008) (e.g. "I like the blue color"). This test's result suggests that "blue attitude" had no relationship with other constructs in our research model. Therefore, the CMV problem is not of a major concern.

In addition, the issue of "non-response bias" may also occur and affect the results of hypothesis testing. To address this, we used a *t*-test to compare respondents who completed the survey early with those who completed the survey lately. Results of the test show that early and late respondents were insignificant in all studied variables. Therefore, the problem of non-response bias did not occur seriously.

4.2 Results of measurement model

In line with the recommendations of Hair *et al.* (2020), this study conducted an analysis of the measurement model. The results of the analysis are presented in Table 1. The findings indicate that all observed items have factor loadings of 0.70 or higher. Furthermore, the variables in the research model exhibit Cronbach's alpha values ranging from 0.793 to 0.948, all exceeding the threshold of 0.70, which demonstrates good reliability of the scale.

Additionally, the variables in the research model exhibit AVE ("average variance extracted") values from 0.616 to 0.763 and CR ("composite reliability") values from 0.865 to 0.955, all exceeding the recommended threshold values of 0.50 for AVE and 0.70 for CR (Lim, 2024). This indicates that the scales demonstrate good convergent validity.

Furthermore, following the guidelines of Hair *et al.* (2020), the "discriminant validity" of the scale was assessed using two primary methods: the "Fornell-Larcker criterion" and the "Heterotrait-Monotrait (HTMT) ratio". The results of both methods are presented in Table 2.

Table 2. Discriminant validity

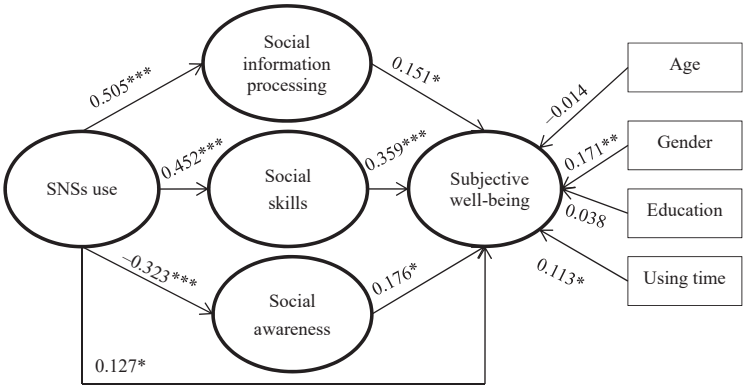
Variables	1	2	3	4	5
1. SNSs use	0.825	*0.531*	*0.490*	*0.362*	*0.273*
2. Social information processing	0.506	0.836	*0.318*	*0.281*	*0.318*
3. Social skills	0.453	0.557	0.873	*0.292*	*0.473*
4. Social awareness	−0.323	−0.258	−0.233	0.785	*0.148*
5. Subjective well-being	0.275	0.310	0.432	0.012	0.829

Note(s): Underline values are square roots of AVE, the italic values are HTMT ratio
Source(s): Authors' own work

In the "Fornell-Larcker" method, the bold values represent the AVE square roots, which were all greater than the corresponding Pearson correlation coefficients between the variables (shown to the right of the bold values). In the HTMT method, all HTMT values (located to the right of the bold values) were below the threshold value of 0.90. The results from both methods indicate that the scales in this study exhibit good "discriminant validity".

4.3 Results of structural model

After verifying the "reliability" and "validity" of the scales, we proceeded with a structural model analysis to assess the research hypotheses. The findings from the structural model are displayed in Figure 2 and Table 3.



Note: *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Figure 2. Structural model results. Source: Authors' own work

Table 3. Results of indirect effects

Paths	β	t-value	p-value
1. SNSs use → social information processing → subjective well-being	0.076	2.054	0.040
2. SNSs use → social skills → subjective well-being	0.163	4.433	0.000
3. SNSs use → social awareness → subjective well-being	−0.057	2.246	0.025

Note(s): $n = 299$, bootstrap analysis with 5,000 subsamples and 95% confidence interval
Source(s): Authors' own work

The analysis results show that using SNSs improves users' subjective well-being (standardized coefficient $\beta = 0.127$, p value less than 0.05). Therefore, hypothesis H1 was accepted. Additionally, as shown in Figure 2 and Tables 3 and it can be seen that using SNSs improves social information processing, which in turn improves users' subjective well-being (indirect effect standardized coefficient $\beta = 0.076$, p value less than 0.05). Therefore, hypothesis H2 was accepted. Similarly, using SNSs improves social skills, which in turn improves users' subjective well-being (indirect effect standardized coefficient $\beta = 0.163$, p value less than 0.001). Therefore, hypothesis H3 was accepted. However, using SNSs reduces social awareness, which in turn increases users' subjective well-being (indirect effect standardized coefficient $\beta = -0.057$, p value less than 0.05). Hence, hypothesis H4 was not accepted.

Following the works of Chai *et al.* (2019), Dang (2021) and Zhang *et al.* (2023), we included respondents' demographics as control variables in the hypothesis testing. Results show that gender (standardized coefficient $\beta = 0.171$, p value less than 0.01) and using time (standardized coefficient $\beta = 0.113$, p value less than 0.05) were positively related to subjective well-being. However, age and education were not significantly related to subjective well-being. These results suggest that users' subjective feelings of happiness and satisfaction varied between men and women and were influenced by users' using experience. In contrast, users' age and education did not affect their subjective feelings of happiness and satisfaction when using SNSs.

5. Discussion and implications

5.1 Discussion

The results of the study show that using SNSs improves users' subjective well-being. This means that when users engage with SNSs, they have the opportunity to engage in various activities in the virtual space, such as communicating and making new friends, chatting and interacting with acquaintances, sharing information and knowledge and gaining new experiences through SNSs. Additionally, they can also search for and enjoy various forms of entertainments on SNSs. With rich and diverse activities and experiences on SNSs, users are likely to develop a sense of happiness and well-being. Our results are consistent with previous studies, such as Dang (2021), Wirtz *et al.* (2021) and Zhang *et al.* (2023), all of which found a positive effect of using SNSs on users' subjective well-being.

In addition, this study found that the three types of social intelligence play different mediating roles in the link between SNSs use and users' subjective well-being. Both "social information processing" and "social skills" had positive mediating roles, while "social awareness" had a negative mediating role. This suggests that when using SNSs, users absorb a wealth of diverse information and knowledge from various sources. This continuous absorption, occurring daily, enhances users' ability to process social information and develop various social skills, such as communication and interaction, as well as the judgment and processing of social information. By improving their ability to absorb and process social information, along with enhancing their social skills, users experience greater satisfaction and happiness with their social lives.

However, the negative mediating role of social awareness suggests that SNS use may expose users to the negative aspects of SNSs. This exposure may influence users' perceptions in a negative way. For example, information overload, social overload or exposure to violence and fraud on SNSs (Baccarella *et al.*, 2018; Mengü and Mengü, 2015) may reduce social awareness, making users more defensive, hesitant, distrustful and less empathetic or understanding in cyberspace. As a result, users may not feel happy or satisfied with their social lives when using SNSs. With this finding, our study provides mixed results on the mediating role of different types of social intelligence in the relationship between SNS use and users' subjective well-being.

5.2 Research implications

Our findings offer important implications for current academic research on SNSs. This study extends subjective well-being theory by identifying and testing the effect of SNSs usage on

users' subjective well-being through the mediating role of social intelligence. One of the main contributions of this research is the encompassing of social intelligence as a new mediating variable in the research model. To our best knowledge, no prior studies have explored the role of social intelligence in the nexus between SNSs usage and users' psychological health in the virtual environment. Thus, our study can be considered pioneering in examining and testing the role of social intelligence in SNSs use research. Our findings may also benefit future researchers interested in studying users' social intelligence in the context of SNSs.

In addition, prior studies have reported inconsistent findings regarding the impact of SNSs usage on users' psychological health. Further evidence is needed to clarify this relationship (Ansari *et al.*, 2024; Yang and Feng, 2024). Surprisingly, our findings also indicated a mixed result in the nexus between SNSs usage and users' subjective well-being. Specifically, SNSs use leads to an enhancement of subjective well-being by improving users' social information processing and social skills. In contrast, SNSs use reduces subjective well-being by decreasing users' social awareness. These findings may reflect the complex nature of the impact of SNSs usage on users' subjective well-being. In other words, using SNSs can create both the dark and bright sides for users' psychological health. One possible explanation for this is that SNSs represent a virtual world where users can freely engage in many different activities. The virtual world of SNSs shares many similarities with the real world, encompassing both positive and negative aspects. Thus, it is suggested that the impact of SNSs usage on users' psychological health is complex and mixed. The choice of mediating and/or moderating variables may reveal different effects of SNSs usage on users' psychological well-being. This may offer important implications for future researchers in identifying and examining the mediating and/or moderating mechanisms of different variables in the link between SNSs use and users' psychological outcomes.

Furthermore, the number of SNSs users is rapidly increasing in the transitional and emerging market of Vietnam. As people in this country view SNSs as an essential part of their daily lives, the impact of SNSs use on users' psychological well-being has garnered special attention from researchers and policymakers. Given the importance of this issue, studies on the relationship between SNSs use and users' psychological health have been underexplored in the specific context of Vietnam. Thus, our findings provide implications for researchers in Vietnam to better understand how SNSs use influences users' subjective well-being through the mediating role of social intelligence. This will offer valuable insights for future researchers interested in studying users' psychological health in the context of SNSs in Vietnam.

5.3 Managerial implications

This research also provides important implications for managers of social networking platforms and individual users. For managers of social networking platforms, this study suggests that managers should implement appropriate policies and strategies to manage their platforms and improve users' psychological health. Given the positive and negative sides of SNSs, managers should encourage users to engage in positive activities while avoid negative ones to improve their subjective well-being. As indicated in this study's findings, managers should strengthen their management methods and activities to motivate users to share, absorb and process positive information and knowledge on SNSs, and to enhance social interaction and communication, thereby improving information processing capacity and social skills. By enhancing users' ability to process social information and develop social skills, users' subjective well-being can be improved. However, managers should also limit and control negative aspects on their platforms, such as false information, fraud, violence and other harmful elements. These negative aspects can reduce users' social awareness and subjective well-being.

For individual SNS users, this study suggests that users should recognize that using SNSs can have both positive and negative effects on their psychological health. The virtual world is not a utopia, as it contains both positive and negative aspects. Users should engage with SNSs

in a thoughtful and rational manner, choosing selective activities. Based on the findings of this study, we recommend that users share and absorb useful information to develop their ability to process social information. At the same time, users should use SNSs as a tool to learn and improve their social communication and interaction skills. These abilities in social information processing and social skills will contribute to greater happiness and social satisfaction. In contrast, users are advised to avoid relying on SNSs as their sole source of social awareness. Misleading and false information can lead to bias, reducing users' social awareness and potentially decreasing their subjective well-being.

5.4 Limitations and direction for future research

First, the non-random data collection method may affect the results of the research model testing. Since we were unable to obtain a complete list of the population and apply random sampling, we had to rely on a non-random sampling technique, which is a significant limitation. We suggest that future studies explore alternative ways to apply random sampling methods to improve the reliability of the results. Additionally, the use of cross-sectional data limits the ability to test causal relationships between variables in the research model. Future research should, if possible, collect longitudinal data to further validate our findings. Moreover, this study focused solely on examining the mediating role of different types of social intelligence. Given the complexity and diversity of the relationship between SNS use and users' subjective well-being, with mixed findings in global studies, future research should explore additional factors in this relationship, such as users' perceptions, motivations, emotions and behaviors.

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