

## THE RELATIONSHIP BETWEEN BEHAVIORS OF SOCIAL NETWORK USE AND SELF-ESTEEM OF ADOLESCENTS

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**Abstract.** This study aims to explore the frequency of social network use, self-evaluation on self-esteem as well as the relationship between social network use behavior and self-esteem of secondary and high-school students. There were 643 adolescents in Hanoi (from 11 to 17 years old) participating in the research by giving responses to 3 scales including: 1) Bergen Social Media Addiction Scale (BSMAS) (2016); 2) Social Media Addiction Scale (SMAS) (2015); 3) Rosenberg Self-Esteem Scale (RSES) (1965) along with semi-structure interviewed with 21 adolescents. The research findings demonstrated that the reliance on social network of adolescents based on Bergen Social Media Addiction Scale and Social Media Addiction Scale was 56% and 89.6% respectively (noticeably, 53.7% of researched students was addicted at medium and extremely heavy level). Although there were different levels of addiction in regard to adolescents' genders, there were no differences in addiction in terms of their grades and academic performance. The adolescents evaluated themselves at low and medium levels of self-esteem. The rate of students who reported their high esteem accounted for only 3.4%. At the same time, there was a negative correlation between social network use behavior and self-esteem of the adolescents. Specific reasons and relevant discussion about the research findings were also clarified in this paper.

**Keywords:** social network, social network use behavior, self-esteem, adolescent.

### 1. Introduction

Currently, the whole world has experienced rapid development of social network with great popularity of different network sites such as Facebook, Zalo, Tiktok, Instagram, WeChat, YouTube, etc. By February 2022, Vietnam had got more than 76.95 million people using social network. This number increased by 6.9% compared with the same time in the previous year [1]. Social network is understood as “means of electronic communication (like websites to develop relationship networks and microblog - microblog: is a kind of blog with small pieces of content such as short sentences, personal pictures or link to a video. This software has the limitation of content size in order to encourage users to regularly upload their status) [2, 3], which helps users create online communities in order to share information, ideas, personal messages, and other content (e.g., video)”. A mutual feature of social network sites is that all content are produced

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by users and they are shared within the same platforms [4]. Therefore, the behavior of social network use can be recognized as free interaction of any individual in social media platforms in order to establish online communities and satisfy the demand for developing contents, sharing information and ideas, connecting through listening-calling functions (normal call, video call) as well as uploading and sharing pictures/video/posts, etc. on social network sites like Facebook, Instagram, Tiktok, Youtube, etc. The behavior of social network use puts different impacts on users' physical and mental health, which includes their self-esteem as well.

According to Rosenberg (1965), self-esteem should be understood as self-evaluation and positive or negative attitude of a person towards himself/herself. [5]. Heatherton and Wyland (2003) supposed that self-esteem should refer to attitude towards an individual in regard of his/her personal belief about skills, capabilities, social relationships and possible results in the future stemmed from that belief [6]. Therefore, self-esteem can be seen as the trust, respect and acceptance of an individual based on his/her self-awareness of qualities and capabilities; which would be reflected through positive/negative (or both) attitude and emotion about the individual's values. Self-esteem is categorized into (1) low self-esteem: distrust and negativism about oneself, specifically including suspicion, self-criticism, self-denial, disregard and depreciation; (2) high self-esteem: precise self-evaluation, positivism about oneself, specifically including appreciation of one's values, confidence, appreciation and acceptance of one's characteristics [7].

The popularity of social network has resulted in its great number of users at different ages. According to statistics by Demand Sage (2023), the adolescent (10-19 years old) is using social network most frequently [8]. The adolescence period falls in the years of secondary and high school or ages of teenagers and the youth as defined by developmental psychology. This is the period with outstanding development of self-awareness and self-evaluation. The self-esteem of the adolescents is established with the trust in their values, acceptance and interest in themselves. Level of self-esteem at this age largely ranges from disrespect (low self-esteem) to high [7].

The use of social network is an inevitable reality in digital society. The adolescents use social network for different purposes, such as studying, entertaining, making friends, or showing off themselves. Hence, the behavior of using social network might bring about huge benefits for these adolescents such as expanding positive energy and values, entertaining, joining social connection, showing personal identities, being more confident, better understanding themselves, accepting and loving themselves more. However, the use of social network also causes negative impacts, making adolescents inadequately evaluate themselves (like suspicion, unconfident, disrespect, etc.). As a consequence, there might be inappropriate criteria and unsuitable behaviors with social standard and the adolescents themselves. Then, they would suffer from negative influence on physical and mental health, including the decrease in adolescents' self-esteem.

Studies on impact of social network use behavior have been carried out by various authors worldwide. For example, Jan et, al. (2007) identified that the more a person uses social network, the lower his/her self-esteem would be [9]. The research by Young (1998) also proved that Internet addiction should be blamed for low self-esteem: adolescents with low self-esteem tend to spend more time using social network compared with those having higher self-esteem [10]. However, it is a matter of fact that in today's world, the youngsters have opportunity to access social network from an early age, which brings them different platforms with diversified activities such as connecting and consuming information as well as showing off themselves through sharing and interacting with entertaining contents and those related to personal life, experiences as well as connecting with family, friends or acquaintances [11]. This poses concerning questions about noticing features of social network use habits of secondary school and high school students and whether the social network brings to them outweigh benefits or

hazards for their self-esteem development. This article would clarify the answers to these inquiries by acquiring two objectives: first, exploring reality of social network using level and self-esteem level of secondary and high-school students; second, indicating the relationship between social network use behavior and self-esteem of the research participants.

## 2. Content

### 2.1. Research participants

This study was carried out with 643 students using social network. They came from 04 schools, 02 secondary schools (A and B) and 02 high schools (C and D) located in Hanoi. As it can be seen in Table 1 below, the features of these participants show that the number of female students was higher than that of males (54.1% and 45.9%); with the research sample, the number of students in grade 7 was the highest (44.3%), which was followed by students at grade 11 (21%), grade 10 (20.7%) and grade 8 (14.2%). The number of students with Excellent academic performance accounted for the largest proportion (60.6%), followed by Good (30.2%) and Average/Below average (9.2%).

*Table 1. Features of research participants*

	Demographics	Categories	Number	Percentage (%)	Total (%)
<i>Sum</i> <i>N=643</i>	<b>Schools</b>	A (Cau Giay district)	271	42.2	100
		B (Ba Dinh district)	104	16.2	
		C (Tay Ho district)	94	14.6	
		D (Cau Giay district)	174	27.1	
	<b>Gender</b>	Male	295	45.9	100
		Female	248	54.1	
	<b>Grade</b>	7	285	44.3	100
		8	90	14	
		10	133	20.7	
		11	135	21	
	<b>Academic performance</b>	Average/Below Average	59	9.2	100
		Good	194	30.2	
		Excellent	390	60.6	

### 2.2. Research tools

In this study, the researchers used three research tools, which were allowed by their authors and previous practioners in Vietnam. In particular, they were:

*Rosenberg Self-Esteem Scale (RSES)*. This scale includes 10 items parallel with 10 statements describing personal feelings about oneself. The participants were required to give their agreeing level with each statement describing themselves based on Likert 4 scale, from level 0 (Completely disagree) to level 3 (Completely agree). The higher the total score was, the

higher the self-esteem would be. In this study, reliability of Cronbach Alpha was 0.76 which was good.

*Bergen Social Media Addiction Scale (BSMAS)*. This scale includes 6 items parallel with 6 questions describing social network use of a person in one recent year. The participants were required to evaluate their frequency level for each statement based on Likert 5 scale, level 1 (hardly ever) to level 5 (extremely often). The higher the total score was, the greater the reliance on social network would be. In this study, reliability of Cronbach Alpha was 0.66 which was good.

*Social Media Addiction Scale (SMAS)*. This scale includes 41 items parallel with 41 statements about social network use of each student. The participants were required to evaluate their frequency of using social network based on Likert 5 scale, level 1(Hardly ever) to level 5 (extremely often). Total score was divided into different groups: non-addicted (41-73), a bit addicted (74-106), moderately addicted (107-139), heavily addicted (140-172) and very heavily addicted (173-205). In this study, reliability of Cronbach Alpha was 0.92 which was very good.

Along with these tests, the current study also employed semi-structured interviewed with adolescents to obtain more information regarding the use of social network among selected participants.

### **2.3. Reality of social network use and self-esteem of adolescents**

#### **2.3.1. Reality of social network use of adolescents based on Bergen Social Media Addiction Scale and Social Media Addiction Scale Scales**

As it can be seen in Table 2, among the researched students, there was 56% relied on social network. Especially, there were 117 students (17.8%) scoring 20 and above (heavily addicted).

**Table 2. Percentage of students relying/non-relying on social network based on Bergen Social Media Addiction Scale**

	Mean score	Range of score	Number	Percentage (%)	Total (%)
<i>Sum</i> <i>N=643</i>	<b>Schools</b>	Below15 (non-reliant)	283	44	100
		Above15 (reliant)	360	56	

*N.B: Mean: Average score*

The data from SMAS for the research sample was Average score = 108.75. In reference with criteria for this scale, students were reliant on social network at medium level. According to Table 3, there was 42.8 % of students being addicted to social network at medium level. There were 70 students (10.9%) being heavily reliant and very heavily reliant on social network.

**Table 3. Percentage of students addicted/non-addicted to social network based on Social Media Addiction Scale SMAS**

	Mean score	Range of score	Number	Percentage (%)	Total (%)
<i>Sum</i> <i>N=643</i>		41 -73 (non-addicted)	67	10.4	
		74 – 106 (a bit addicted)	231	35.9	
		107 – 139 (moderately addicted)	275	42.8	

	<b>108.75</b>	140 – 172 (heavily addicted)	61	9.5	100
		173 – 205 (very heavily addicted)	9	1.4	

*N.B: Mean: Average score*

We applied statistical inference based on Pearson correlation between the two above scales. It was apparent that the two scales had positive correlation with  $p=0.00$  and  $r=0.74$ . This means that students having high score in Bergen social media addiction scale got similar high score in Social Media Addiction Scale SMAS. Results in tables 2 and 3 proved the same conclusion.

**In terms of gender:** the result of  $t$ -test with Bergen Social Media Addiction Scale showed that: there was statistical difference between male and female,  $p<0.05$ ,  $t(641) = -2.90$ , in particular, female students got higher level of social network addiction compared with male ones. The average score revealed that  $Mean_{male} = 14.63$ ; and  $Mean_{female} = 15.70$ . In terms of Social Media Addiction Scale SMAS, it was obvious that: there was statistical difference between male and female with  $p<0.05$ ,  $t(641) = -3.46$ , in particular, female students got higher addiction level than that of male. The average score revealed that  $Mean_{male} = 104.77$  and  $Mean_{female} = 112.12$ .

**In terms of grade:** The result of one-way ANOVA with Bergen Social Media Addiction Scale illustrated that: there was no statistical difference among the research grades,  $p>0.05$ ,  $F=2.11$ . The average score revealed that  $Mean_{grade7} = 14.76$ ;  $Mean_{grade8} = 16.06$ ;  $Mean_{grade10} = 15.24$ ;  $Mean_{grade11} = 15.55$ . In terms of Social Media Addiction Scale SMAS, it was indicated that: there was no statistical difference among the research grades  $p>0.05$ ,  $F=1.68$ . The average score revealed that  $Mean_{grade7} = 106.61$ ;  $Mean_{grade8} = 113.32$ ;  $Mean_{grade10} = 108.33$ ;  $Mean_{grade11} = 110.64$ . In other words, despite their different grades, students had the same level of using and being addicted to social network.

**In terms of academic performance:** The result of one-way ANOVA with Bergen Social Media Addiction Scale demonstrated that: there was no statistical difference among students with different academic performance,  $p>0.05$ ,  $F=2.33$ . In terms of Social Media Addiction Scale, it indicated that: there was no statistical difference among students with different academic performance  $p>0.05$ ,  $F=2.39$ . So, despite their academic performance at good, excellent, or average/below average performance, students had the same possibility of being addicted to social network.

### 2.3.2. Reality of self-esteem of adolescents based on Rosenberg Self-Esteem scale

In order to explore students' level of self-esteem, the authors used Rosenberg Self-Esteem Scale. It shown that the whole scale got  $Mean = 16.18$  and  $SD = 5.22$ ; students in the research sample got self-esteem at medium level (49.5%) and even low level (47.1%), the number of students having high self-esteem accounted for small percentage 3.4% (equal to 22 students).

**In terms of gender:** The result of  $t$ -test showed that: there was statistical difference between male and female students  $p<0.05$ ;  $t(641)=3.15$ ; among them male students got higher self-esteem than female ones  $Mean_{male} = 16.88$  and  $Mean_{female} = 15.59$ .

**In terms of grade:** The result of one-way ANOVA showed that: there was no statistical difference among students at the research grades,  $p>0.05$ ;  $F=1.74$ . The average score revealed that  $Mean_{grade7} = 15.87$ ;  $Mean_{grade8} = 17.18$ ;  $Mean_{grade10} = 15.86$ ;  $Mean_{grade11} = 16.47$ .

**In terms of academic performance:** The result of one-way ANOVA showed that: there was no statistical difference among students with different academic performance,  $p>0.05$ ;  $F=2.12$ . The average score revealed that  $Mean_{excellence} = 16.46$ ;  $Mean_{good} = 15.94$ ;  $Mean_{average} = 15.07$ .

## 2.4. The relationship between social network use behavior and self-esteem of adolescents

**Table 4. Pearson correlation between Bergen Social Media Addiction Scale, Social Media Addiction Scale and Rosenberg Self-Esteem Scale**

		<b>Bergen Social Media Addiction</b>	<b>Social Media Addiction Scale</b>	<b>Rosenberg Self-Esteem Scale</b>
<b>Bergen Social Media Addiction</b>	Pearson correlation	1	.742**	-.101*
	Sig. (2-tailed)		.000	.010
	N	643	643	643
<b>Social Media Addiction Scale</b>	Pearson correlation	.742**	1	-.115**
	Sig. (2-tailed)	.000		.003
	N	643	643	643
<b>Rosenberg Self-Esteem Scale</b>	Pearson correlation	-.101*	-.115**	1
	Sig. (2-tailed)	.010	.003	
	N	643	643	643

*N.B: \*:  $p < 0.05$ ; \*\*:  $p < 0.01$*

In order to explore the relationship between social network use behavior and self-esteem of the adolescents, we applied statistical inference based on the correlation between Bergen Social Media Addiction Scale, Social Media Addiction Scale and Rosenberg Self-Esteem Scale. The results showed that: there was negative correlation between social network use behavior and self-esteem of the adolescents in the research sample. In particular: there was negative correlation between Bergen Social Media Addiction and Rosenberg Self-Esteem Scale with  $r = -0.10$ ;  $p < 0.05$ . Similarly, there was negative correlation between Social Media Addiction Scale and Rosenberg Self-Esteem Scale with  $r = -0.12$ ;  $p < 0.01$ . In other words, the more students use social network and the higher addiction is, the lower their self-esteem would be and vice versa.

In order to intensively explore this relationship, the authors used *t*-test to identify the differences in self-esteem (if there were) between the 2 groups reliant/non-reliant on social network based on Bergen Social Media Addiction Scale. The results showed that: there was statistical difference in self-esteem of the two groups: reliant/non-reliant on social network based on Bergen Social Media Addiction Scale,  $p = 0.007$ ;  $t(641) = 2.68$ . This means students reliant on social network got lower average score than those non-reliant on the social network.

**Table 5. Results of *t*-test between two groups of reliant/non-reliant on social network based on Bergen Social Media Addiction**

<b>Difference between 2 groups of reliant/non-reliant on social network</b>	<b>t(641)</b>	<b>Sig. (2-tailed)</b>	<b>Means Difference</b>	<b>Std. Error Difference</b>
	2.684	0.007	1.107	0.412

We used one-way ANOVA test to identify differences in self-esteem among 5 groups of students having different levels of social network addiction based on SMAS. The results showed that: there was statistical difference in self-esteem among 5 groups of students with different levels of social network addiction based on SMAS,  $p < 0.05$ ;  $F = 3.90$ . This finding confirmed the above conclusion that: there was not only difference in self-esteem between

students reliant/non-reliant on social network, but also differences within students with different levels of social network addiction: the heavier the addiction is, the lower the average score of self-esteem would be.

## 2.5. Discussion

This study contributes to the diversity in the whole picture about social network use and self-esteem as well as the relationship between these two aspects within the research sample of adolescents in Hanoi. On the one hand, social network brings benefits for students like entertainment (88%), convenient connection (86%) and study support (73.9%); as well as great chances to show off (27.7%), which would result in more self-confidence. By contrast, uncontrolled use of social network should be one of the concerning reasons for unexpected behaviors which are inappropriate with the adolescents themselves, might lead to legal violation.

The gender difference regarding social network addiction has been researched with different results. In this study, the noticing finding was that female students got higher level of social network addiction compared to the male ones. This conclusion was similar to the studies by Andreassen et al., (2017) [12] with Norway participants and BSMAS scale, and Simsek, Elciyar & Kizilhan (2019) [13] with Turkey high-school and university students. The exploration for causes of that reality has received interest of various researchers. Partially, it could be seen that female students would often spend more time joining social network [14]. However, the above finding in this study on adolescents from Hanoi was different from previous works with recognition of higher social network addiction among male students compared with female ones. For example, the research by Alnjadat et al., (2019) [15] indicated that male students posed more apparent addiction than female. Other authors supported this conclusion [16, 17 & 18]. At the same time, certain studies could not prove statistical significance of gender difference for different social network addiction levels. Accordingly, some researchers realized that there was no relationship between gender and social network addiction; for instance, studies with secondary school students from Hong Kong, [19], those from Bhutan [20], as well as students as Facebook users in Malaysia [21] and Facebook users in Poland [22]. We suppose that the inconsistency in social network reliance between male and female students might depend on typical cultures of each country and research scales.

In terms of grade and academic performance criterion, there were no big differences within students at different research grades and academic performances. In other words, despite their different ages and academic competences (excellent, good, average/below average), students would face the same risk of being reliant on social network if there is no supervisory from adults. In fact, during doing the survey, we realized that some excellent students got personal problems but they were incapable of solving by themselves or unable to get any timely psychological help; therefore, they had to join in social network to release negative emotions, avoid their problems; which gradually caused their reliance on the social network sites "*Without social network, I don't know how I could face those emotions...really difficult...*" M.A. (grade 10) said.

Self-evaluation report by students indicated their recognition of self-esteem at low level. This is a concerning issue. In fact, correct self-evaluation, self-respect and recognition of one's values are essential to the adolescents. Those results indicated students' hesitation in answering questions of "Who am I? What I am like? What capabilities do I have? What make(s) me proud of myself?" so that they can be more confident with their values and strengths.

Comparing levels of self-evaluation on self-esteem, we identified that male students got higher self-esteem than female ones. According to McClure, in multi-variable analysis, female students showed lower self-esteem than male students [23]. This suggested that it is essential to

pay more attention to the exploration of psychological difficulties related to low self-esteem within female students during their adolescence period. Female ones often use social network based on images (users share and interact with images like Instagram, Snapchat and Pinterest) more than male students. Also, in relation to male, it is more often that female students compare themselves with other people on social network and suffer from negative influence from social comparison in terms of physical appearance [24].

Our study clarified the relationship between social network use and self-esteem among the adolescents. Previous studies in other countries also indicated negative correlation between social media addiction and self-esteem [12, 20]. The more students are reliant on social network, the lower their self-esteem is. In other words, these students would not have precise evaluation of their own personalities. In comparison with those non-reliant on social network, the relied ones would also have difficulty in recognizing their strengths. From our own perspective, this can be explained by social comparison, which regularly appears on social network. In fact, the social network creates a non-stop comparing environment, causing pressure for users to compete and compare themselves with people frequently appearing on social network sites. In the interview, a 7th-grade student stated that she usually followed “hot girl” on TikTok and she always compared her with those girls. She shared: *“They look more beautiful than me, more talented and successful”*; *“They are much better than me in all aspects, I feel like a left-behind person, I am like an ugly and not talented girl”*. Looking at great success, perfect image and ideal life of other people might reduce the adolescents’ self-esteem when these youngsters have neither understood their strengths nor identified plans for their future. They are in need of more time and experience to make decisions. Therefore, it would be difficult for them to accept themselves, making it hard to feel that they are “adequate” and deserve.

Another hypothesis to explain the above-mentioned fact might be owing to regular access to virtual standards of beauty on social network. It cannot be denied that the use of social network as an approach to interact with other people (excluding uploading personal contents) might easily make adolescents compare themselves with other people in society. Then, when they find themselves impossible to meet the requirements of beauty, the self-esteem of the adolescents decreases, causing their dissatisfaction with their physical appearance. [24]. It should be noted that this feeling is inevitable because the physical appearance on the social network is often edited so that it is attractive to all individuals. However, after a while the social network environment would create beauty standards that are challenging to acquire but become “normal”.

### **3. Conclusion**

The two driving objectives of the study were achieved: first, this study recognized the reliance of the researched adolescents on social network, which was at medium level. While there was gender difference in social network reliance, there were no considerable differences in terms of academic performances. This result was similar to students’ self-evaluation of their self-esteem. Based on the self-evaluation reports, students ranked their self-esteem at medium level. There was negative correlation between social network use behavior and self-esteem. This means that the more students use social network, the lower their self-esteem would be.

In addition to the above results, this study still has certain limitations: first, it only covered students in some secondary and high schools in Hanoi; second, although its results illustrated gender differences in relation to social network addiction and self-evaluation on self-esteem; the study have not intensively explored contributors to that difference. This is possibly an approach as a research gap for future studies.

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