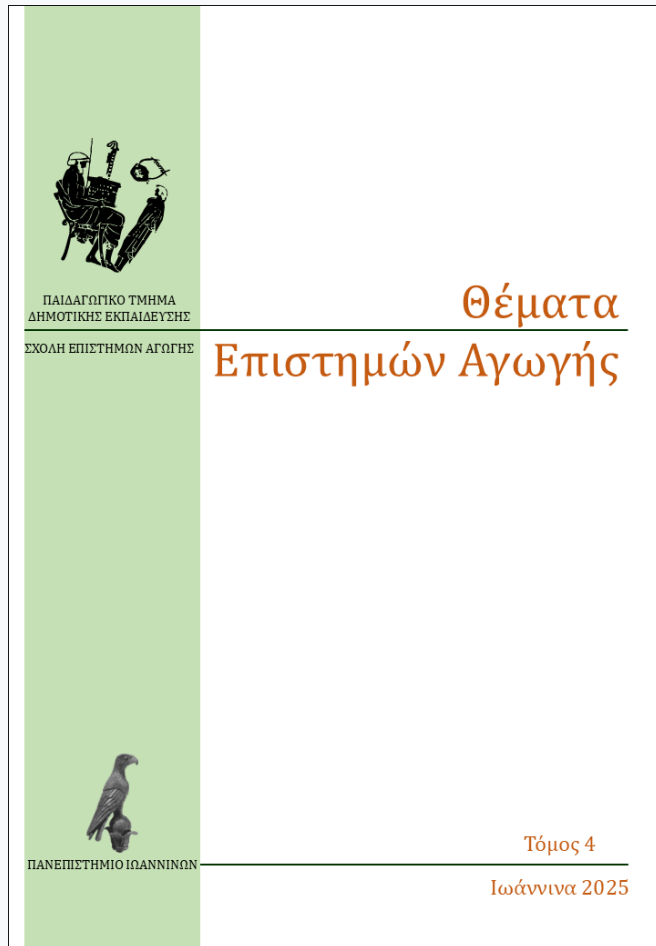


Θέματα Επιστημών Αγωγής

Vol 4, No 1 (2025)



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doi: [10.12681/thea.40838](https://doi.org/10.12681/thea.40838)

To cite this article:

Alexandropoulou, E., & Baourda, V. (2025). The Examination of Effect of the Facebook Emotional Connection and Usage Intensity on Self-esteem and Life Satisfaction. *Θέματα Επιστημών Αγωγής*, 4(1), 18–26. <https://doi.org/10.12681/thea.40838>

An Examination of the Effects of Emotional Connection to Facebook and Usage Intensity on Self-esteem and Life Satisfaction

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Abstract. The aim of this study was to investigate the association among emotional connection to Facebook and usage of this social media platform on one hand, and users' self-esteem and well-being on the other. Participants were 237 Greek adults that were recruited through social media platforms and completed the Facebook Intensity Scale, Rosenberg Self-Esteem Scale and Satisfaction with Life Scale. Analyses revealed a significant, weak, negative correlation between Facebook emotional connection and self-esteem, whilst there was no correlation to life satisfaction. Moreover, the daily use of Facebook was found to significantly impact self-esteem, but not life satisfaction. Further analyses examined the effect of gender and age and revealed that men had higher self-esteem compared with women and that participants who belonged to the age group of 46 – 55 had the highest self-esteem among all the respondents. Results suggest that emotional connection and usage intensity of Facebook appear to negatively affect users' self-esteem.

Key words: emotional connection to Facebook, usage intensity of Facebook, self-esteem, life satisfaction

Introduction

Due to the enormous expansion of technology, in the late years, relationships among individuals can be built and maintained through social media platforms (Jan et al., 2017; Moningka & Eminiari, 2020). Social media, which are defined as internet-based applications, prevail in people's everyday life, since through them individuals interact with each other, communicate and form social relationships (Haase & dan Young, 2010; Moningka & Eminiari, 2020). Currently, there is a plethora of Social Networking Sites (SNSs), which provide users the opportunity to share information, images, videos and ideas.

Facebook was launched in 2004 and is still considered as one of the most popular and most active social media platforms worldwide (Jha et al., 2016). Facebook continues to dominate the online landscape, despite the launch of Instagram and other SNSs such as Tik-Tok (e.g., Anderson & Auxier, 2021; Moningka & Eminiari, 2020). In Greece, 7.14 million people currently use Facebook, out of the total amount of 7.40 million social media users (Statista Research Department, 2022). Nevertheless, a noticeable shift in its audience is evident over recent years, with most teenagers turning to Instagram as their primary social media platform (Anderson & Jiang, 2018)

Facebook allows users to create an electronic profile, share photos and details about their lives and experiences, observe other people's lives and express their emotions and feelings (Moningka & Eminiari, 2020; Vogel et al., 2014). Research suggests that adolescents are using a lot of social media in order to form their identity during puberty (Moningka & Eminiari, 2020). Nevertheless, except for adolescents, people usually tend to share a positive lifestyle

and demonstrate a happy life in Facebook, hoping to impress others and get more likes and comments; through this way people receive positive social feedback, which seems to boost their self-esteem (Marengo et al., 2021; Moningka & Eminiari, 2020; Vogel et al., 2014). This reveals humans' drive to compare themselves with others, either consciously or unconsciously, and to evaluate themselves via this social comparison (Haferkamp & Kramer, 2011; Moningka & Eminiari, 2020). Consequently, the way a person views and evaluates themselves as valuable and capable is called self-esteem, and self-esteem seems to be related to social comparison (Leary et al., 1995; Moningka & Eminiari, 2020; Vogel et al., 2014).

There are two types of social comparison: upward, which occurs when an individual compares themselves with others, who have positive characteristics, and downward, when a person is compared with others, who have negative characteristics (Vogel et al., 2014). Although upward comparison may seem beneficial, it does not always provide inspiration. In some cases, people feel as if they are not enough and evaluate themselves poorly, since they compare themselves with others, who are considered as superiors (Vogel et al., 2014). On the other hand, downward comparison does not always provide negative feelings, since when a person compares themselves with another person being in a worse situation, this may lead to improvement (Vogel et al., 2014).

According to sociometer theory, which suggests that social acceptance or social inclusion is tracked by self-esteem, social feedback (i.e., likes and positive comments in the context of Facebook) affects an individual's self-esteem, since a feeling of either inclusion or exclusion is created (Baumeister et al., 2003; Leary, 2005; Leary et al., 1995). A person's self-esteem is composed of two components: how a person feels about oneself and about their self-worth (Liu et al., 2016). Usually, people who experience high levels of self-esteem, view themselves positively and feel worthy, whereas people with lower self-esteem, feel inadequate and unworthy. Literature indicates, in most cases, that there seems to be a relationship between social comparison on Facebook and self-esteem, but results are inconsistent with some studies suggesting a strong relationship between the two variables (Vogel et al., 2014), whilst others find no significant relationship (Jang et al., 2016). A recent study, found evidence of a negative correlation between social comparison in Facebook and self-esteem, suggesting that the more an individual is using Facebook comparing behaviors, the lower their self-esteem (Moningka & Eminiari, 2020). In another study of young Italian adults, a negative relationship between self-esteem and social comparison, regardless of gender was revealed (Bergagna & Tartaglia, 2018). Moreover, in this study women who were experiencing low self-esteem, used to spend more time on Facebook, comparing themselves to others, trying to increase their self-esteem. The researchers suggested that women tend to consider themselves as inferior on many levels, and that why they are more prone to social comparison than men (Bergagna & Tartaglia, 2018). Another study revealed a significant negative relationship between self-esteem and Facebook use and that the majority of Facebook users are engaged in comparing themselves with others, mainly through upward social comparison (Jan et al., 2017).

Another variable that has also been studied in relation to social media, and more specifically to Facebook, is subjective well-being. Subjective well-being refers to the experience of positive emotions, low levels of negative moods and high life satisfaction (Snyder & Lopez, 2001). Therefore, well-being relates to individuals' perspective about their life; whether they perceive it as being pleasant, and their satisfaction with it (Myers, 2000; Snyder & Lopez, 2001; Verduyn et al., 2017). Previous research offers mixed findings in the case of SNS use and subjective well-being. Whilst some studies have demonstrated that subjective well-being is positively associated with non-excessive SNS usage (Wang et al., 2017), others have indicated that SNS usage negatively impacts users' subjective well-being, lowering it in cases when users suffer from depression and anxiety (Shaw et al., 2015; Tandoc et al., 2015). For example,

a study that examined the relationship between subjective well-being and SNS usage, found that SNS usage predicted a decrease in life satisfaction (Wang et al., 2017).

Additionally, Facebook usage intensity seems to play an important part in Facebook's effect on psychological variables. Other studies, which have investigated the association between life satisfaction and Facebook, found that life satisfaction was negatively impacted by Facebook usage frequency (Blachnio et al., 2016). More specifically, studies reveal that the more a person is spending on Facebook, the lower their life satisfaction level (Elphinston & Noller, 2011; Stieger, 2019). On the other hand, research suggests that Facebook frequency of use plays an important role. For instance, people who use Facebook normally and are not too much involved and non Facebook users, both report high levels of both self-esteem and life satisfaction (Blachnio et al., 2016; Tromholt, 2016).

Based on the above, the existing literature reveals that Facebook use, especially excessive use, adversely affects users' self-esteem and life satisfaction. However, no study has examined thus far the impact of Facebook usage in Greek adults. Therefore, the present study intended to expand our knowledge regarding the correlation between Facebook use and self-esteem and life satisfaction in a sample of Greek adults. On the basis of previous studies, the current study hypothesized that emotional connection to Facebook would be negatively associated with the users' self-esteem and life satisfaction. We also intended to examine whether time spent on Facebook, number of Facebook log-ins, and number of Facebook friends affect emotional connectedness to Facebook, self-esteem, and life satisfaction. Finally, the study explored whether there are any gender and/or age differences in the emotional connectedness to Facebook, self-esteem, and life satisfaction.

Method

Participants

The sample consisted of 237 Greek adults (151 women, 63.7%), aged between 18 and 65 years old. A convenience sampling strategy was employed, utilizing a social media platform (i.e., Facebook) for participant recruitment. Participation was anonymous, voluntary and there was no incentive. Participants had to meet two conditions to take part in the study: to have an active Facebook account and to be over 18 years old. Most of them had university education, were married, and were employed in the private sector (Table 1).

Table 1. Participants' demographic characteristics

		n	%
Gender	Male	86	36.3%
	Female	151	63.7%
Age	18 - 25	10	4.2%
	26 - 35	49	20.7%
	36 - 45	98	41.4%
	46 - 55	64	27%
	56 - 65	16	6.8%
Education Level	Elementary Education	4	1.7%
	Secondary Education	14	5.9%
	Post Secondary Education	35	14.8%
	Bachelor's	77	32.5%

	Master's	100	42.2%
	PhD	7	3%
Relationship Status	Single	55	23.2%
	In a relationship	41	17.3%
	Married	111	46.8%
	Divorced	28	11.8%
	Widowed	2	0.8%
Occupation	Student	7	3%
	Employed in the Public Sector	40	16.9%
	Employed in the Private Sector	93	39.2%
	Self-employed	70	29.5%
	Unemployed	17	7.2%
	Retired	4	1.7%
	Other	6	2.5%

Measures

Sociodemographic variables. Participants were requested to provide information regarding their gender, age, education level, occupation level, and current relationship status.

Emotional connection to Facebook. The Facebook Intensity Scale (FBI; Ellison et al., 2007) is a validated self-report questionnaire that captures both behavioral and emotional engagement with the Facebook platform. It includes 14 items measured on a five-point Likert scale ranging from “strongly disagree” to “strongly agree” that form the “emotional connection with Facebook” subscale (e.g. “Facebook is part of my everyday activity”). Another three items assess frequency and intensity of usage (i.e., time spent on Facebook, number of Facebook logins, and number of Facebook friends). The internal consistency of the emotional connection subscale is good (Ellison et al., 2007), while the scale has been translated and adapted in Greek, showing good internal consistency (Spiliopoulou, 2018). In the present study, the emotional connection subscale had Cronbach's $\alpha = .88$.

Self-esteem. The Rosenberg's Self-Esteem Scale (RES; Rosenberg, 1965) is a widespread measure of self-esteem, which demonstrates solid psychometric properties (Schmitt & Allik, 2005). It consists of ten self-report items measured on a four-point Likert scale, ranging from “strongly disagree” to “strongly agree” (e.g., “I feel that I am a person of worth, at least on an equal plane to others”). The scale has been translated and adapted in Greek indicating good internal consistency (Leontopoulou, 2013). In the present study, the scale's reliability was $\alpha = .79$.

Life satisfaction. The Satisfaction with Life Scale (SWLS; Diener et al., 1985) is a popular short self-report questionnaire that measures the cognitive component of subjective well-being, in other words how satisfied a person is with their life. It contains five items on a seven-point Likert scale, ranging from “strongly disagree” to “strongly agree”. The scale has good psychometric properties (Pavot & Diener, 2008) and it has been translated and adapted in Greek, showing good internal consistency (Galanakis et al., 2017). In the current study, Cronbach's alpha was $\alpha = .89$.

Procedure

The study was conducted online, through a google form that was available from January 15th to February 5th, 2022. Before starting the online survey, all participants read through the information sheet, which included information about the aims of the study. Participants had to consent to the terms of the study before proceeding to answering the survey's questions. They were also informed that they could revoke their consent and withdraw from the study, by contacting the researchers before the end of February 2022. (i.e., before result analysis). Approval for this study was obtained from the ethics committee of the [blinded].

Results

Data analysis was performed using IBM SPSS Statistics 26 statistical package. First, Cronbach's alpha coefficient was used to assess the scales' reliability. Second, normality for each variable was explored through Kolmogorov–Smirnov Test (Coolican, 2018; Kim, 2013). Results revealed that data on self-esteem ($D(237) = .080, p = .001$) and life satisfaction ($D(237) = .121, p < .001$) were not normally distributed, whilst data on Facebook emotional connection followed a normal distribution ($D(237) = .050, p = .200$). Thus, non-parametric tests were used. Third, Spearman's correlation was conducted to investigate the hypothesis of the research. Finally, to examine the effect of gender, age, and frequency and intensity of Facebook usage Mann-Whitney and Kruskal-Wallis tests were performed.

Spearman's correlation revealed a weak, negative, significant correlation between self-esteem and Facebook emotional connection $r(235) = -.20, p = .001$. No correlation was found between life satisfaction and Facebook emotional connection, $r(235) = -.07, p = .299$. Finally, a moderate, positive and significant relationship was found between self-esteem and life satisfaction, $r(235) = .53, p < .001$ (Table 2).

Table 2. Means, Standard Deviations, and Correlations for study variables

	M	SD	1	2	3
1. Facebook emotional connection	38.31	10.13	-		
2. Self-esteem	31.15	4.13	-.20**	-	
3. Life Satisfaction	24.92	5.30	-.07	.53**	-

** $p < 0.01$ (2-tailed); $N = 237$

To explore the effect of frequency and intensity of Facebook usage on study variables, Kruskal-Wallis analyses were performed. The analyses revealed that the time users spend on Facebook had a significant impact on Facebook emotional connectedness [$H(3) = 48.57, p < .001$] and self-esteem [$H(3) = 11.47, p = .009$], but not on life satisfaction [$H(3) = 5.65, p = .130$]. The number of times users log into Facebook significantly affected emotional connectedness to Facebook [$H(3) = 57.68, p < .001$], but had no effect on self-esteem [$H(3) = 3.11, p = .375$] or life satisfaction [$H(3) = 1.83, p < .610$]. Also, the number of friends one appears to have on Facebook, was found to significantly affect Facebook emotional connectedness [$H(3) = 31.03, p < .001$], but did not impact the users' self-esteem [$H(3) = 4.57, p = .335$] or life satisfaction [$H(3) = 6.91, p = .141$].

A Mann-Whitney test was performed to determine the effect of gender on self-esteem, life satisfaction and Facebook emotional connection. The analyses revealed a significant difference in self-esteem between male (mean rank = 132.89) and female participants (mean rank=

111.09), with the former reporting greater self-esteem, $Z(86, 151) = -2.36, p = .018$. No significant difference was found in life satisfaction between male (mean rank= 118.93) and female participants (mean rank= 119.04), $Z(86, 151) = -.12, p = .991$ or in emotional connection to Facebook between men (mean rank= 123.51) and women (mean rank= 116.43), $Z(86, 151) = -.76, p = .444$ (Table 3).

To examine the effect of age on the variables investigated in the study, Kruskal-Wallis tests were used. The results showed that age had a significant effect on self-esteem [$H(4) = 11.05, p = .026$, highest mean rank at the age group 46 - 55 = 134.20], but not on life satisfaction [$H(4) = 1.17, p = .883$] or emotional connectedness to [Facebook $H(4) = 3.33, p = .504$] (Table 3).

Table 3. Means and Standard Deviations for study variables per gender and age group

	Facebook emotional connection	Self-esteem	Life Satisfaction
Gender			
Male	39.07 (10.10)	32.05 (3.68)	24.95 (5.18)
Female	37.87 (10.16)	30.64 (4.30)	24.91 (5.37)
Age Group			
18-25	37.40 (12.24)	29.10 (3.48)	26.40 (5.13)
26 - 35	39.18 (9.36)	29.94 (4.10)	25.08 (4.50)
36 - 45	38.14 (9.39)	31.38 (4.04)	24.97 (5.68)
46 - 55	37.42 (11.29)	31.95 (4.28)	24.66 (5.37)
56 - 65	40.75 (11.36)	31.50 (3.83)	24.31 (5.35)

Discussion

The current study sought to explore the relationship between emotional connection to Facebook and its usage on one part and the users' self-esteem and life satisfaction on the other part in a sample of Greek adults. The initial hypothesis that emotional connection to Facebook is negatively associated with the users' self-esteem and life satisfaction, was only partially supported. More specifically, no correlation was found between life satisfaction and emotional connection to Facebook, but there was a significant negative correlation between self-esteem and emotional connection to Facebook. Moreover, results indicated that self-esteem was significantly impacted by the number of hours that users spend daily on Facebook, while the number of online friends and the number of daily logins had no effect. These results seem to complement other studies that reveal a negative association between self-esteem and Facebook (Bergagna & Tartaglia, 2018; Jan et al., 2017; Moningga & Eminiar, 2020).

Previous studies suggest that the more a person is using Facebook, the lower the level of their life satisfaction (Błachnio et al., 2016; Elphinston & Noller, 2011; Stieger, 2019). However, in the current study Facebook usage had no impact on the users' life satisfaction. Perhaps, participants in our study belonged to the percentage of people who are moderately satisfied with their lives, since most people tend to feel this way (Diener & Diener, 1995). Moreover, apart from the emotional connectedness with Facebook, which did not have any effect on life satisfaction, frequency and intensity of usage, as well as the number of friends users have seemed to have no effect. In the current study, most of the respondents aged between 36 and 55 years old and they had an occupation, meaning that possibly they did not have as much free time as younger people to spend online, in order for their life satisfaction to be impacted. Also, older people usually tend to have higher life satisfaction (Bartram, 2021).

The study also explored the existence of any gender or age differences in the relationship between emotional connection to Facebook, self-esteem and life satisfaction. Results showed that gender and age did not have an effect on life satisfaction and emotional connection with Facebook, but they had a significant effect on self-esteem. Men had higher self-esteem than women, which is in alignment with relative literature that suggests women are more prone to social comparison, due to the fact that they tend to have lower self-esteem compared to men (Leary et al., 1995; Moningka & Eminiar, 2020; Vogel et al., 2014). In addition, age seems to affect self-esteem, and more specifically, participants of 45 - 55 years old had higher self-esteem, compared to the other age groups. This is a new finding suggesting that middle-aged people seem to experience high levels of self-esteem, view themselves positively and feel worthy.

The results of this study should be viewed within its limitations. First, the sample was relatively small and it was rather heterogeneous regarding gender and age. These characteristics may have masked significant gender or age differences and do not allow us to safely generalize results. Another limitation is relevant to the way Facebook use and number of Facebook friends were measured. Other studies have suggested that motivation and whether a user has an active or a passive stance towards Facebook may have an important impact (Appel et al., 2016; Verduyn et al., 2015). Also, it has been suggested that differentiating between real Facebook friends and acquaintances might be important for research (Stieger, 2019). Future studies are invited to take these variables into account and further explore their impact on users' self-esteem and life satisfaction. A final limitation is the study's correlational design, which does not allow to draw any conclusions regarding the causal directions of the observed relationships. Future studies could collect multiple waves of data to examine longitudinal models that will allow the examination of Facebook's relationship with diverse psychological variables.

Conclusions

Even though the results of this study should be seen as preliminary, due to its correlational nature, they add to our knowledge regarding the impact of Facebook on psychological variables, such as self-esteem and life satisfaction. Furthermore, it is the first study that examined these variables in a sample of Greek adults. The study found evidence that Facebook emotional connection negatively affects a person's self-esteem, while it does not appear to affect subjective life satisfaction. Current results seem to suggest that Facebook usage intensity might have an important effect, which should be further explored as it has important implications. Indeed, if intensity of usage mediates the relationship between Facebook use and self-esteem, users who spent less time on Facebook should be shielded from any disadvantageous effects.

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Αναφορά στο άρθρο ως: Alexandropoulou, E., & Baourda, V. (2025). Examination of the effect of Facebook emotional connection and usage intensity on self-esteem and life satisfaction. *Themes in Education Sciences*, 4(1), 18-26.

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