The Moderating Effect of Gender on the Predictive Role of Self-Esteem in Problematic Facebook Usage: A Quantitative Exploration among Undergraduates from Universities in the Colombo District, Sri Lanka

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Abstract

The advancement of technology has transformed face-to-face communication by transferring interactions to virtual spaces such as Facebook, which are heavily used by undergraduates and might be negative to their mental health. The present quantitative study examined the predictive role of self-esteem in the problematic use of Facebook among undergraduates from universities in the Colombo District, Sri Lanka, and how gender moderates the connection. The study was conducted using a cross-sectional design, and an online survey with 372 undergraduates. Bergen's Facebook addiction scale was used to measure the outcome variable, problematic usage of Facebook, while the Rosenberg self-esteem scale was used to test the predictor variable, self-esteem. In the analysis, gender was evaluated as a moderator variable. Data was analyzed using Simple linear regression and logistic regression analysis via SPSS and the Process Macro tool. Every phase of the research process included a careful integration of ethical considerations. Results show that higher self-esteem is associated with higher problematic Facebook utilization; however, this relationship is statistically significant (F $(1, 370)$ = 26.230, p<.05), and it only accounts for a small percentage of the variance (R^2 =.066) in problematic use of Facebook among young individuals in Sri Lanka with no gender-based moderation. A variety of psychosocial factors significantly influence the self-esteem and problematic usage of Facebook of young individuals in Sri Lanka, and this effect is consistent for both gender categories, male and female. More research on the psychological and environmental problems linked to youth utilization of social media is desperately needed in Sri Lanka.

Keywords: Self-esteem; Problematic Facebook Usage; Gender

Introduction

Human communication has undergone a significant transformation as a result of the fast and effective transition from physical communications to online interaction due to the rapid advancements in technology and science. It has resulted in an evolution of media such as Facebook, Instagram, TikTok, and YouTube that makes it simple for people to communicate with one another (Scott et al., 2017). With its wide range of functions and accessibility, social networking sites have grown to be a vital part of the lives of young people, particularly those who are undergraduates (Braghieri et al., 2022). Similarly, Doleck (2018) claimed that social media has significantly improved the interactive sources that online users have access to and has helped enhance university students' involvement in these processes. Like numerous other nations, Sri Lanka has been affected by the Facebook phenomenon; as of early January 2021, the country had 7 646 000 consumers on Facebook, or roughly 35.8 percent of

the population in total; university students' use of Facebook is increasing daily. Furthermore, there were 2.5 million internet consumers in Sri Lanka as of 2010, with the majority of young adults published in the World Bank Report 2012 (Thuseethan & Kuhanesan, 2015). Further confirming, a study conducted on undergraduates in Colombo found that Facebook is the most popular social media network among undergraduates (Athukorala, 2021), which has a considerable impact on their psychological health.
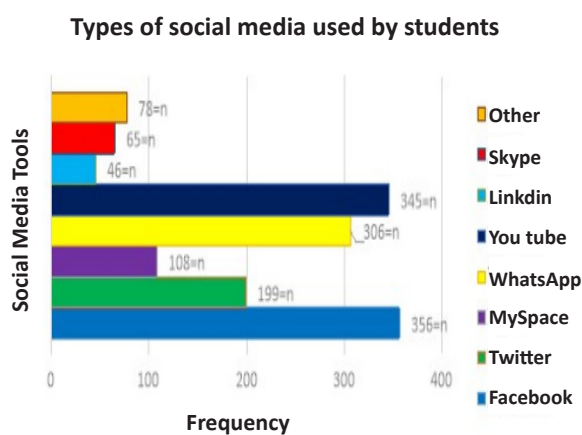

Figure 1. The high percentage of undergraduates who use Facebook regularly in Sri Lanka

Problematic Facebook Utilization (PFU) is distinguished by salience, relapse, mood alteration, withdrawal, tolerance, and conflict which lead to social and psychological problems, including addiction and a lack of self-control (Salik Sengul et al., 2021). A meta-analysis by Marino (2018) discovered relationships between problematic use of Facebook and individual differences, gender disparities, and the duration spent online. The problematic use of Facebook negatively correlates with self-esteem, while excessive online time is positively correlated with internet dependency.

Sri Lankan research found that undergraduates might be more vulnerable to Facebook addiction due to the social media platform's growing popularity, particularly in those with low self-esteem. Self-esteem, which can be defined as a person's view of their value and potential, is essential for interactions with others and psychological health (Andreassen et al., 2017). Research continuously shows that

people who have lower self-esteem might be more likely to use Facebook excessively in an attempt to find validation and make connections with others, which could exacerbate emotional distress and social problems (Marino et al., 2018). Conversely, people with lower self-esteem particularly women may feel dissatisfied because they constantly compare themselves on Facebook demonstrating the profound influence of online platforms on individual characteristics.

Similarly, gender has been shown to moderate the relationship between students' problematic use of Facebook on online platforms and their sense of self-worth (Wahyuni & Maksum, 2020). The demographic data show that 32% of consumers in the 18–24 age range are female and 68% of consumers are male. In comparison to men, who typically engage in higher levels of online activity, women are substantially more likely to utilize Facebook and exhibit a lower amount of self-esteem (Jayarathna & Fernando, 2014). Conversely, significant attention has been paid in recent research to the moderating role of gender on the association between problematic use of Facebook and self-esteem. Research shows that male consumers of Facebook have a significantly stronger correlation with self-esteem when it comes to problematic usage of the platform than female consumers (Doleck & Lajoie, 2018). Males seem to be more negatively impacted by problematic Facebook usage in terms of their self-esteem, which suggests that they may be more susceptible to the negative consequences of social media addiction (Huang, 2020). These findings highlight the need for focused interventions to deal with the particular difficulties that different gender groups encounter.

This study investigates the predictive role of self-esteem in problematic use of Facebook and the moderating influence of gender among undergraduates aged 18-34 in the Colombo district, Sri Lanka, encompassing both government and non-government university students. The study includes Facebook users who have been active for at least a year to identify consistent behaviors.

The current research contributes to the scant literature on the moderating effect of gender in the predictive role of self-esteem in problematic use of Facebook among university students in the Colombo District. The results, which focus on this particular setting, offer insightful information that can guide mental health therapies and instructional initiatives meant to boost self-esteem. Furthermore, even if there is a dearth of literature on this particular setting, the study paves the road for more studies in this field by emphasizing how important it is to comprehend how self-esteem affects social media activities. Therefore, this research aims to explore the moderating impact of gender on the relationship between self-esteem and Facebook addiction among university students. Therefore, the present study hypothesizes:

Hypothesis 1: There is a predictive role of self-esteem in problematic Facebook usage.

Hypothesis 2: There is a moderating effect of gender on the predictive role of self-esteem in problematic Facebook usage.
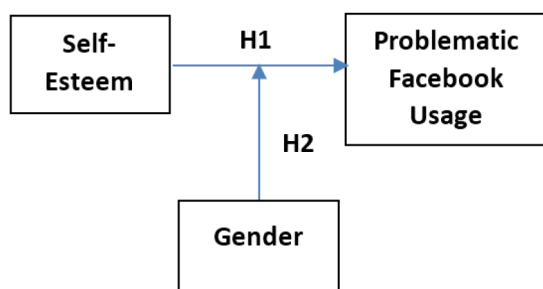

Figure 2. Conceptual Framework for moderator influence of gender on the association between self-esteem and problematic usage of Facebook

Materials and Methods

Design

The present quantitative study investigates the moderating influence of gender on the predictive role of self-esteem in problematic Facebook addiction among undergraduates in the Colombo District, Sri Lanka. Using a cross-sectional approach, gender served as the moderator, self-esteem as the predictor variable, and Facebook addiction as the outcome variable.

Participants

Convenience sampling was used to collect data from 372 undergraduate students (190 females and 182 males) aged 18-34 from both government and non-government universities in the Colombo District. Inclusion criteria required participants to be undergraduates and have at least one year of Facebook use. Exclusions included those who did not provide their informed consent, lacked one year of Facebook usage, or were outside the Colombo district.

Measurements

Bergen Facebook Addiction Scale (BFAS.)
The Bergen Facebook Addiction Scale (BFAS) was used to measure problematic Facebook addiction, and it consisted of six items: conflict, salience, mood modification, relapse, tolerance, and withdrawal symptoms, rated on a Likert scale based on experiences from the previous year. This scale was chosen for its strong validity and reliability in Sri Lanka ($\alpha = .83$) (Andreassen et al., 2017).

Rosenberg Self-Esteem Scale.
The Rosenberg Self-Esteem Scale, a 10-item tool with a four-point Likert scale, was used to assess self-esteem. RSES demonstrates a high internal consistency ($\alpha = 0.85$) and strong construct validity in Sri Lanka, with test-retest reliability ($r = 0.83$) indicating consistent results over time.

The demographic information sheet.
It included questions on age, gender, university name and type, the year Facebook account was started, whether the participant is an undergraduate or not and whether it has been active for at least a year. Gender was assessed as male or female, in line with Sri Lankan cultural and legal norms.

Ethical Consideration

The study received approval from the SLIIT Ethics Review Committee and the LJMU Psychology Ethics

Panel. Participants were assured of confidentiality and anonymity, with no data withdrawal post-submission. They were informed of no risk or harm and the researcher prioritized participant safety.

Statistical Analysis

Statistical analysis in this study utilized IBM SPSS and the PROCESS Macro tool. Descriptive statistics calculated mean, frequency, and standard deviation. Assumptions for linear regression and moderation were tested using Hayes' Model 1, ensuring robust analysis. Hypothesis 1 was tested with simple linear regression to assess self-esteem's predictive role in problematic Facebook usage. Hypothesis 2 employed logistic regression via the PROCESS Macro tool to investigate the potential influence of self-esteem on problematic use of Facebook, given that the outcome variable (addict and non-addict) is dichotomous. (Fuentealba-Urra et al., 2021). Furthermore, an interaction term was incorporated to evaluate the moderating influence of gender on this association.

Results

The current study proposed two hypotheses: (1) self-esteem would predict problematic use of Facebook, and (2) gender would moderate the predictive relationship between self-esteem and problematic use of Facebook among university students from the Colombo District, Sri Lanka. Assumptions for both analyses were tested and assumed to be met. The results included the sample's descriptive statistics and the findings from the hypothesis tests. According to Descriptive statistics, the majority of participants (61.3%) had moderate levels of self-esteem, and 25.8% corresponded to Bergen's definition of Facebook addiction.

Through a simple linear regression analysis, it was found that problematic Facebook addiction was significantly predicted by self-esteem ($F_{(1,370)}$ = 26.230, p =.000), accounting for 6.6% of the variance (R^2 =.066). The results show that hypothesis 1 is accepted, indicating that self-esteem has a predictive role in problematic Facebook usage among undergraduates.

Table 1. Predictive Nature of Self-Esteem

Variable	B	Beta	Std. E
Constant	1.359		.078
SE	.183	.257	.036
R^2	.066		

The logistic regression analysis was conducted to examine the moderator impact of gender on this relationship using Hayes' PROCESS Macro model 1 for SPSS with a 95% confidence interval and 5000 bootstrap samples. Self-esteem had a significant positive impact on PFU (B = 0.7958, p = 0.0046) with a strong positive effect (95% CI [0.2458, 1.3458]). However, gender alone did not significantly impact PFU (B = .1400, p = 0.5866), nor did the interaction term between SE and Gender (B = 0.4927, p = 0.2516) with a confidence interval [-0.3495, 1.3348] including zero, indicating no moderation effect of gender.
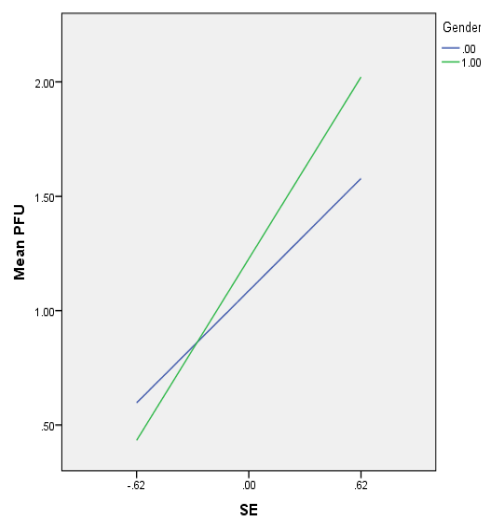

Figure 3. Graphical Representation of the relationship between Problematic Facebook Usage and Self-esteem in males and females

A slope diagram in Figure 3 shows a greater association between PFU and SE for men than women, but the non-parallel lines suggest no significant moderation by gender. Thus, hypothesis 2 is rejected, confirming a positive effect between PFU and SE without sufficient evidence that gender moderates this interaction.

Discussion

The study aimed to investigate how gender influences the predictive nature of self-esteem in the problematic use of Facebook in undergraduates from Colombo District Sri Lanka. The study examined two main hypotheses: (1) self-esteem would predict problematic use of Facebook, and (2) gender would moderate the predictive association between problematic Facebook usage and self-esteem. As a result, the study found that there is a predictive nature of self-esteem in problematic Facebook usage and gender does not moderate the relationship.

Hypothesis 1 posited that self-esteem is predictive in problematic usage of Facebook among university students. The results of the regression analysis supported this hypothesis, revealing significant findings ($F_{(1,370)} = 26.230$, $p = .000$) and an R^2 value of .066. When compared to previous findings, present outcomes are consistent with studies that have found an association between low self-esteem and higher problematic use of Facebook. Further confirming, (Huang, 2020) indicates that those with higher levels of self-esteem are likely to engage in fewer problematic Facebook-related behaviors. As a result, people who use Facebook less problematically tend to be more confident and self-worth-oriented because they can use social media without negatively impacting their mental health. This emphasizes how encouraging positive social media behaviors can help users feel more confident (Ali Aksar et al., 2022). However, the small impact size also aligns with studies indicating that numerous factors, such as socioeconomic level, personality traits, and educational performance, influence the problematic usage of Facebook(Alkan et al., 2015). Possible explanations for variations with studies demonstrating stronger impacts could involve variations in sample demographics, measurement techniques, or the existence of other moderating factors such as age, personality traits, and vulnerability (Fuentealba-Urra et al., 2021). This suggests that lower self-esteem is linked with increased problematic usage of Facebook, though the impact size is fairly small.

Hypothesis 2 posited that gender moderates the predictive nature of self-esteem in problematic Facebook usage. The results of the logistic regression analysis show that there is no moderating impact of gender on the predictive role of self-esteem in problematic use of Facebook indicating that it did not differ between females and males. Contrary to the findings of the present study, most quantitative explorations stated that there is a moderator influence of gender on this relationship (Wahyuni & Maksum, 2020). Although problematic Facebook use is linked to low self-esteem, the study did not find that gender had any moderating impact on this association. Previous Sri Lankan literature shows that currently both males and females equally use Facebook highlighting its pervasive role in social interactions across gender lines for various purposes including consumption, participation and production of content (Rathnayake & Rathnayake, 2018). The overall findings about gender's moderating impact are weakened because the study's capacity to infer causality is limited due to its reliance on cross-sectional data. Additionally, other possible moderators like socioeconomic background, academic performance, or personality characteristics were not investigated in this study. These variables may interact with gender to affect how problematic utilization of Facebook and self-esteem are related (Fuentealba-Urra et al., 2021). Regardless of these subtleties, the lack of substantial gender moderation implies that male and female university students should receive the same attention in initiatives that reduce the detrimental impact of online platforms on self-esteem. The lack of literature in Sri Lanka on the matter makes it more difficult to critically assess the results of the current study.

Limitations

Causal inferences are limited by the cross-sectional design, which restricts generalizability to Colombo. Cultural and regional variations may impact on the relationship. The robustness of the findings of the present study is limited by the lack of control

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variables, such as personality traits, educational achievements and socioeconomic level, which may have an impact on this relationship and the moderating influence of gender examined. Because of Sri Lankan cultural norms, the study only included respondents who were identified as male or female, failing to acknowledge the increasingly accepted LGBTQI population.

Implications and Future Studies

The study demonstrates that problematic usage of Facebook is significantly predicted by self-esteem. This suggests that the effect of self-worth is universal, challenging gender-based models of social media consumption. There are important practical implications for instructors, psychologists, and policymakers, with a focus on promoting students' educational and personal objectives through responsible technology consumption. Interventions dealing with Facebook's negative effects on self-esteem can be guided by these outcomes.

To determine the causal links between gender, problematic usage of Facebook, and self-esteem, future research requires the use of longitudinal methods. Further improving the understanding of these phenomena would include the addition of control factors like personality characteristics and socioeconomic status, as well as more diverse samples. For a thorough understanding of social networking impacts, future studies should consider the LGBTQI community in Sri Lanka as well as a variety of age categories, districts, and platforms, including YouTube, Instagram, and TikTok.

Conclusion

The outcomes of the study provided insightful information about how self-esteem predicts problematic Facebook, a commonly used social media platform, among students in Sri Lanka. This insight emphasizes the necessity of focused interventions to deal with concerns about self-esteem and decrease the detrimental effects of online platforms on the well-being of students. Teachers and psychologists can assist students in adopting better social media

behaviors by emphasizing the development of self-esteem. These results also emphasize the need for more investigation into the potential influences of demographics and other online platforms on the predictive role of self-esteem in problematic use of Facebook association.

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