

## Role of Intensive Usage of Mobile-Based Social Media in Academic Performance Among the Higher Secondary Students

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### Abstract

The present study aims to investigate the specific ramifications of extensive social media use via smartphones on academic performance among higher secondary school students in Nanded, Maharashtra. By exploring these dynamics, the study seeks to provide insights into how digital technologies influence the holistic development of students and inform strategies for promoting healthier and more balanced digital engagement practices. This study employed a survey research design to investigate the relationships between academic performance, and social media usage via smartphones among higher secondary students in Nanded city. The research aimed to achieve two main objectives: 1) to determine the degree of correlation between academic performance, and the use of social media via smartphones, and 2) to predict academic performance based on the intensity of social media usage.

To address these objectives, the study followed a two-step process. First, a new questionnaire titled "Mobile-Based Social Media Usage Assessment" was developed and standardized using established procedures. This questionnaire was designed to capture data on social media usage patterns and their potential impacts on academic outcomes. In the second step, the survey study was conducted utilizing this newly developed questionnaire to assess and predict the relationships between academic performance, and the intensity of social media use. This design provided a structured approach to understanding how Smartphone-mediated social media interactions influence students' academic success.

**Key words:** Mobile-Based Social Media, Academic Performance

### Statement of problem :

Mobile phones have become ubiquitous in modern society, primarily because they eliminate the need for physical cables or wires for communication purposes. Instead, these devices rely on electromagnetic radiation to transmit and receive data, whether it is network data or sound. This reliance on wireless technology allows mobile phones to be used virtually anywhere, contributing to their widespread adoption.

The persistent integration of digital devices, ranging from notebook computers to tablets and smartphones, has revolutionized contemporary lifestyles. Smartphones, in particular, have amalgamated various functionalities like cameras, multimedia players, internet browsers, navigation systems, email clients, gaming consoles, and social

networking platforms into portable devices (Boulos et al., 2011; Kim et al., 2014; Mok et al., 2014). Smartphones enhance convenience, they also bring about significant side effects. Research by Kuss and Griffiths (2011) indicates that excessive smartphone usage can diminish real-life social interactions, lower academic performance, and strain relationships. Moreover, the portability of smartphones facilitates constant access to personalized internet services, contributing to issues akin to problematic internet use, such as psychiatric disorders and impaired social and emotional functioning (Ha et al., 2006; Shapira et al., 2003).

### Objectives of The Study

1. To develop a questionnaire for the assessment of intensity of usage of social media with smart phone (mobile phone) among the students. To see the relationship between time spent on social media and

health related physical fitness of higher secondary school students. To see the relationship between use of social media and academic performance of higher secondary school students. To predict the status of health-related physical fitness and academic performance on the basis of the intensity of usage of social media (by using smart phones).

### Hypotheses

$H_0$ : There is no significant relationship between intensive usage of mobile-based social media and academic performance among higher secondary students.

### Limitations of the Study

Respondents may alter their responses to align with societal expectations or perceived norms, especially when answering questions about their social media usage habits academic performance. This bias could potentially affect the accuracy of self-reported data.

The study's findings may be influenced by the characteristics of the sample population recruited from a specific geographic area (e.g., Nanded, Maharashtra). Generalizing results to broader populations of higher secondary students may require caution, as demographics and cultural factors can vary significantly.

The rapid evolution of social media platforms and technological advancements may render the study's findings time-sensitive. Changes in social media trends or usage patterns could affect the relevance and applicability of the study's conclusions over time.

Factors external to the study, such as socioeconomic status, family dynamics, and educational environment, could influence both social media usage patterns and the outcomes being measured (e.g., academic achievement), potentially confounding the results.

### Delimitation of the Study

**Geographical Scope:** The study specifically focuses on higher secondary school students from Nanded district, Maharashtra. Findings may not be

generalizable to students from other regions or districts with different socio-cultural contexts.

**Age Group:** The study exclusively examines adolescents in the higher secondary school stage (typically aged 15-18 years). Results may not be applicable to younger or older student populations in different educational stages.

**Focus on Mobile-Based social media:** The study is delimited to exploring the impact of intensive usage of mobile-based social media platforms (e.g., Facebook, Instagram, Snapchat) on health-related physical fitness and academic performance. Other forms of digital media or offline social interactions are not within the scope of this investigation.

**Quantitative Approach:** The research employs a questionnaire-based quantitative methodology to gather data. Qualitative aspects such as in-depth interviews or ethnographic observations are not included in this study design.

**Time Frame:** The study captures a snapshot of student behaviors and outcomes during a specific period. Longitudinal changes or seasonal variations in social media use and academic performance are not considered in this cross-sectional study.

### Academic Performance

Academic performance refers to the extent to which a student has achieved their educational goals and objectives within an academic setting. It is commonly assessed through various metrics that evaluate a student's understanding, knowledge, skills, and competencies in their studies. Key indicators of academic performance include: **Grades and Test Scores:** The most direct measure of academic performance, typically reflected in letter grades, percentages, GPA (Grade Point Average), or standardized test scores.

### Research Design

This study employed a survey research design to investigate the relationships between academic performance, and social media usage via smartphones among higher secondary students in Nanded city. The research aimed to achieve two main objectives: 1) to determine the degree of correlation academic performance, and the use of social media via smartphones, and 2) to predict academic performance based on the intensity of social media usage.



This study was carried out in two distinct phases:

### Phase-I: Method of Development of Questionnaire

(Mobile-Based Social Media Usage)

To assess mobile-based social media usage among higher secondary school students in Nanded city, a new questionnaire was developed following established procedures. The "Mobile-Based Social Media Usage" questionnaire was specifically designed and standardized for this study to evaluate various aspects of social media usage.

### Phase-II: Method of Survey study

**a) Population:** The population (600) for this study consisted of higher secondary school students (ages 17-18) from Nanded city.

**b) Sample :** Due to feasibility constraints, including time and budget limitations, a purposive sample of 600 students was selected, with an equal distribution of 300 male and 300 female students.

The data collection process began with the researcher visiting the authorities of selected colleges in Nanded city to explain the research objectives and obtain permission. Upon approval, students were invited to participate in the study. The researcher provided each participant with a questionnaire and research-related information.

### C) Procedure for Administration of the Questionnaire

The structured questionnaires were distributed to a total of 600 students (300 male and 300 female), along with pencils and erasers. Before starting, participants were instructed to provide their name, residential address, contact number, and demographic details (e.g., age, sex). They were briefed on the questionnaire's purpose and how to complete it, including examples and clarifications of any doubts. Completed questionnaires were collected and checked to ensure all were filled out properly before proceeding with analysis.

### Variables and Tools

#### Academic Performance

Grades/Marks: Obtained from the higher secondary school examinations administered by the schools.

#### Mobile-Based Social Media Usage

Assessment Tool: The newly developed "Mobile-Based Social Media Usage" questionnaire with 25 items, covering dimensions such as frequency of use,

social comparison, emotional connection, self-esteem, and negative impact.

### Statistical Analysis

Descriptive statistics were applied to process the data collected for the development of the questionnaire. This initial analysis was followed by item analysis to assess item difficulty and item discrimination using statistical equations. Pearson's product-moment correlation was employed to assess the test-retest reliability and construct validity coefficients of the questionnaire.

For the survey data, descriptive statistics were utilized to process information regarding the use of social media via smartphones academic performance. The scores from each test were then correlated using Pearson's product-moment method. Additionally, regression analysis was employed to predict the status of students' academic performance based on their social media usage scores.

### Major Findings

#### Results on Development of Questionnaire

The new questionnaire i.e., "mobile based social media use", as developed in this investigation, is found reliable and valid. The reliability coefficient of the Scale was ranged from 0.64 to 0.75, whereas the validity coefficient was from 0.64 to 0.69. The norms of this scale as established are found gradable for evaluating the mobile based social media use among higher secondary school students.

#### Results of Survey on Mobile Use

The result of survey of the status of "frequency of use" (Dimension-1 of mobile based social media usage assessment) indicates that the mean and standard deviation values for "frequency of use" (Points) of the higher secondary school students were 16.15 ( $\pm 2.49$ ). This indicates that the frequency of use of the participants was average.

The status of "social comparison" (Dimension-2 of mobile based social media usage assessment) indicates that the mean and standard deviation values for "social comparison" (Points) of the higher secondary school students were 17.03 ( $\pm 3.02$ ). This indicates that the social comparison of the participants was average.

In case of "emotional connection" (Dimension-3 of mobile based social media usage assessment), the result of mean and standard deviation values were

18.14 ( $\pm 2.97$ ). This result indicates that the performance in “emotional connection” of higher secondary school students was average.

The status of “Self-esteem” (Dimension-4 of mobile based social media usage assessment) indicates that the mean and standard deviation values for “Self-esteem” (Points) of the higher secondary school students were 18.93 ( $\pm 3.03$ ). This indicates that the self-esteem of the participants was average.

In case of “negative impact” (Dimension-5 of mobile based social media usage assessment), the result of mean and standard deviation values were 18.75 ( $\pm 3.01$ ). This result indicates that the performance in “negative impact” of higher secondary school students was average.

The status of “overall mobile based social media usage” indicates that the mean and standard deviation values for “mobile based social media usage” (Points) of the higher secondary school students were 89.02 ( $\pm 6.53$ ). This indicates that the overall mobile based social media usage of the participants was average

### Results on Relation Between Mobile Use on Academic Performance

The study revealed a significant relationship between mobile-based social media use and academic performance among higher secondary school students. as demonstrated by a moderately negative correlation ( $r = -0.590$ ,  $p < 0.001$ ), suggesting that higher mobile-based social media use is associated with lower academic performance in these students. The results are also presented in correlation heat map.

### Results of Regression Analysis

The regression analysis was conducted to examine the predictive power of mobile-based social media use on academic performance among higher secondary school students.

**Academic Performance:** Finally, the regression analysis showed that mobile-based social media use significantly predicted academic performance,  $F(1, 598) = 319.46$ ,  $p < 0.001$ . The regression coefficient ( $b = -0.555$ ,  $p < 0.001$ ) highlighted a negative association, with the model accounting for 34.8% of the variance in academic performance ( $R^2 = 0.348$ ). This result suggests a significant adverse impact of social media use on students' academic outcomes.

### Discussion of Results

The role of mobile-based social media in the lives of adolescents is a topic of growing concern, particularly regarding its impact on academic performance. The results of present study revealed a significant negative correlation between mobile-based social media use and academic performance among higher secondary students. These findings highlight the broader implications of social media consumption patterns on adolescent well-being and academic performance.

The development of the new questionnaire titled “Mobile-Based Social Media Use” in this study identified five key dimensions: frequency of use (A1), social comparison (A2), emotional connection (A3), self-esteem (A4), and negative impact (A5) (Cha & Seo, 2018; King et al., 2013; Rikkers et al., 2016; Giunchiglia et al., 2018; Taylor, 2020). Following a rigorous standardization process, a total of 25 items were retained. The questionnaire demonstrated adequate reliability, with reliability coefficients ranging from 0.64 to 0.75, and validity, with validity coefficients ranging from 0.64 to 0.69. Given its foundation in established research and its robust psychometric properties, this newly developed and standardized questionnaire is deemed appropriate for assessing mobile-based social media use among higher secondary school students.

The negative correlation between mobile-based social media use and academic performance observed in this study is also well-documented in the literature. Excessive use of social media has been associated with lower academic achievement due to factors such as distraction, reduced study time, and impaired cognitive functioning (Kolhar et al., 2021; Junco & Cotton, 2011). Social media can distract from academic focus by creating opportunities for multitasking, which has been shown to negatively impact academic performance (Rosen et al., 2013). Regression analysis in this study further confirms the significant impact of social media use on academic performance, suggesting that increased mobile-based social media engagement predicts lower academic outcomes. This finding is consistent with studies that have demonstrated a negative relationship between time spent on social media and academic achievement (Karpinski & Duberstein, 2009). For example, research has found that social media use



can lead to lower grades and academic performance due to its role in creating distractions and reducing the time available for academic work (Sharma, & Behl, 2022; Boateng, & Amankwaa, 2016). Thus, the hypothesis "*H<sub>01</sub>: There is no significant relationship between intensive usage of mobile-based social media and academic performance among higher secondary students*" is rejected.

Finally, the study provides compelling evidence of the negative effects of intensive mobile-based social media use on academic performance among higher secondary students. The negative correlations and significant regression results emphasize the importance of addressing social media use as a critical factor influencing educational outcomes. These findings suggest a need for interventions aimed at reducing excessive social media use and promoting healthier lifestyle choices, and focused academic efforts.

#### Conclusion:

Academic performance is significantly and negatively impacted by intensive social media use. The findings suggest that students who spend more time on social media platforms tend to have diminished focus on their studies and allocate less time to academic activities, leading to poorer academic performance.

#### Recommendations

**Limit Social Media Usage:** Students are encouraged to set specific time limits for social media use to prevent it from interfering with their academic responsibilities. Allocating designated periods for study can help maintain a balanced lifestyle.

**Enhance Time Management:** Develop effective time management skills to balance social media use with academic commitments. Creating a study schedule that minimizes distractions can lead to better academic performance and overall well-being.

**Practice Mindful Media Consumption:** Be mindful of the content consumed on social media, ensuring it adds value to your personal and academic growth. Consider using digital tools or apps that monitor and restrict screen time.

**Monitor and Regulate Social Media Use:** Parents should actively monitor their children's social media usage and set appropriate boundaries to prevent excessive use. Encouraging the use of

educational apps and content can help direct screen time towards productive activities.

**Incorporate Digital Literacy Programs:** Schools should integrate digital literacy programs into the curriculum to educate students on the responsible use of social media. These programs can cover topics such as time management, the impact of social media on health, and strategies for reducing screen time.

#### Suggestions For Future Research

Conduct longitudinal studies to examine the long-term effects of intensive mobile-based social media use on physical fitness and academic performance.

Explore the effectiveness of various interventions aimed at reducing social media use among students. This could include implementing digital detox programs, educational workshops on media literacy, or behavioral modification strategies, and assessing their impact on physical fitness and academic performance.

#### Contribution To The Knowledge

This study significantly advances our knowledge of the impact of intensive mobile-based social media use on higher secondary students by highlighting its detrimental effects on academic performance. Through detailed correlation and regression analyses, the research quantifies how excessive social media use negatively influences academic achievement. By identifying these specific areas affected, the study provides a robust framework for developing targeted interventions and offers a comprehensive perspective on how digital behaviors can compromise academic outcomes.

Moreover, the findings contribute to the broader field of digital literacy and academic performance by emphasizing the urgent need for balanced social media use. The study not only lays the groundwork for future research directions, including longitudinal and interventional studies, but also offers practical implications for students, parents, educational institutions, and policymakers. By suggesting actionable strategies to manage screen time and promote healthier lifestyles, the research supports the development of programs aimed at mitigating the negative impacts of social media and enhancing overall student well-being.

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