

From Scroll to Sleep: Exploring the Social Media Effects Productivity & Learning Outcomes


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DOI:10.54741/SSJAR/6.1.2026.317

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This paper examined the relationship between social media usage, sleep quality and individual performance, relatively focus on the moderate role of sleep quality. A quantitative research design was employed to collect data from ninety participants through structured questionnaire. In this study the independent variable social media usage was measured by using a five-point Likert scale basis to assess daily usage of social media, multitasking and perceived impact on productivity. The quality of Sleep works as a mediating variable measured on sleep duration restfulness and the impact of device use. The performance of an Individual was the dependable variable, which was assessed through completion of task, focus and goal achievement. In this study Descriptive statistics indicated moderate social media engagement, variable sleep quality and average performance levels. Sleep quality positively correlates with performance. Analysis of mediation demonstrated that sleep quality. It may partially mediate the relationship between social media usage and performance. This study also suggesting that higher social media engagement reduces sleep quality which in turn affects performance outcomes. The findings from this study can highlight the importance of managing digital habits. Also to maintain the sleep hygiene to enhance productivity and personal effectiveness. This research may provide an understanding pathways linking technology used to performance outcomes.

Keywords: reliability, likert scale, sleep quality, productivity, mediation

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Sandip Bhattacharyya, Assistant Professor, Department of Commerce, THK Jain College, Kolkata, West Bengal, India. Email: sandip2074@gmail.com	Bhattacharyya S, From Scroll to Sleep: Exploring the Social Media Effects Productivity & Learning Outcomes. Soc Sci J Adv Res. 2026;6(1):60-67. Available From https://ssjar.singhpublication.com/index.php/ojs/article/view/317	

Manuscript Received 2025-12-12	Review Round 1 2025-12-30	Review Round 2	Review Round 3	Accepted 2026-01-19
Conflict of Interest None	Funding Nil	Ethical Approval Yes	Plagiarism X-checker 3.63	Note



1. Introduction

In a recent competitive environment social media has become an universal element of daily life. That is influencing how individuals interact, work and study. Most of the existing research paper examined the direct effects of social media on academic and professional outcomes. But there is a limited consideration has been given to the underlying mechanism that may explain the said relationships. Sleep quality is a crucial factor that can mediate an impact of social media usage on productivity, as insufficient or disrupted sleep may damage human concentration power, memory skill and work performance. This study employs an interconnectedness in between social media habits, sleep behavior and performance. In this paper it has been observed how social media usage affects individual work performance directly or indirectly, through its influence on sleep.

2. Literature Review

(Kuss & Griffiths, 2017) studied and highlights the potential addictive of social media sites and their negative consequences on users' mental health. That is including work anxiety and stress level. Excessive use of social media is linked to poor sleep quality due to excessive use and screen exposure that can subsequently decline human academic and work performance. This can be impairing concentration and increasing fatigue in human mind.

(Cain & Gradisar) discussed how the excessive use of social electronic media including social media platforms disrupts production of melatonin and late-sleep onset in children and adolescents. The resulting factor that is deprivation of sleep negatively influences perceptive functions such as memory and attention. That is actually leading to poorer academic performance.

(Levenson, Shensa, Sidani, Colditz, & Primak, 2017) used in their study a large sample of youth aged in between 19 to 32. This study established that the sleep disturbances has been occurred due to higher frequency and intensity of social media usage. Simultaneously, these sleep problems in turn - around that is correlate with decreased self - reported work productivity and human mental health issues. It may be underscoring sleep arbitrating role.

(Alfonsi, Scarpelli, D', & Stella, 2020) in their study they reported a strong correlation between poor sleep quality and lower academic achievement measured by GPA among university students. The author found that the excessive social media use will heavily impact greater sleep disturbances and elevated stress levels suggesting sleep quality as a key mediator.

(Rosen, Lim, Carrier, & Cheever, 2014) established an experimental study that recurrent disruptions from text messaging's and social media during academic tasks. That ultimately lead to significant declines in task performance and information retention.

3. Research Gap

Most of the existing studies on social media usage and academic and professional performance focus on direct relationships that may not considering mediating factors such as sleep quality. A few research studies systematically and statistically examine how sleep patterns is mediating its role and it's the effects of social media usage, impact on productivity. This may be incorporating a mediating variable. From this perspective this research provides an understanding of how digital habits affect daily routine and functioning. Additionally, previous research studies often realize a convenient sample of students or academic and work professionals. But rarely sightsees both sleep and performance together in a combined model. The research gap has been mitigated by integrating all three construct variables in a single academic framework.

4. Objective of the Study

- **To examine the relationship in between Social media usage and Individual's academic and work performance:** How the frequency level and strength of social media engagement influence academic or work-related performance. This study may serve the purposes to identify whether higher usage of social media is correlated with lower productivity.
- **To evaluate the impact of Social Media usage on Sleep patterns:** A strong engagement with social media that may affects sleep patterns including duration of sleep, regularity and restfulness.

The usage of social media may contribute to sleep disturbances and create potential indirect effects on overall human.

- **To examining the interceding role of sleep quality in between social media usage and individual performance:** this study acts as a pathway through social media influences academic and professional performance. To determine whether the negative impact of social media on productivity is partly explained by the severe disruption of sound quality of sleep patterns by its mediating variables. Also this study tries to examine by improving sound sleep can be a barrier to the negative effects of social media usage.

5. Research Methodology

Research design: This research study uses quantitative research design to explore the relationship between social media usage, sleep patterns and individual performance. This research involves Quantitative methods. It is suitable for the study because it allows precise measurement of social media usage, sleep quality and performance levels. It provides an opportunity to test hypotheses that to evaluate the strengths of relationship among construct variables in a structured and systematic manner.

Sample size: In this research paper, total responses collected from ninety participants. They have been selected through convenience sampling method. The techniques of sampling has been used Convenient sampling. The sample participants mixed of their ages, gender, educational backgrounds and occupations.

Variables used in this study: The study includes independent variables, mediator variables and dependent variables:

- **Independent variables:** These are the variables that influence other variables. In this study, the independent variable is social media usage which is measured through five questions in a structured questionnaire.
- **Mediator variable:** The mediator variable explains the mechanism through which the independent variable that may affect dependent variable. In this study, sleep patterns act as a negotiator.

Sleep pattern is measured through five questions by assessing average sleep durations, waking up and rested patterns, difficulty sleeping due to use of devices, influencing of social media before sleep and misdeed of sleep schedule. Mediating analysis shows that how social media affects individual performance indirectly through its effect on sleep outlines.

- **Dependent variable:** In this study Academic and Work performance outcome that is influenced by the independent variable and mediator. In this research, individual performance is the dependable variable, measured through five questions about overall performance satisfaction, timely completion of tasks, focused during activities, meeting or exceeding expectations and achievement of personal goals. Performance is the key outcome of interest and reflects how social media users sleep patterns.

Data collection tool: A structured questionnaire was developed to measure all the variables. The questionnaire was divided into three sections corresponding to the variables. The Social Media Usage section is the first and foremost section, consisting of five questions using five-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). Sleep pattern is the second section, consisting of five questions using the same Likert scale. Under this study these items were later reverse-coded to ensure consistency. The third section was academic performance, consisting of five questions measuring participants' perception of their performance on a five-point Likert scale.

Data collection procedure: Data collection was carried out using questionnaires. The questions were distributed through email and social media platforms making it convenient for participants to respond. Before the completion of survey, the respondents were informed about the research purpose, assured confidentiality and told that participation was voluntary.

Data preparation: After collection data was reviewed for accuracy and completeness using Microsoft Excel. In this case of negatively worded sleep items, reverse coding was applied.

Data analysis: Under this study SPSS software has been used and various statistical tools like Reliability analysis, Cronbach's Alpha were of each set of questionnaire substances.

Social media usage, sleep patterns and performance skills were all established. Initially, the sleep variable showed a negative alpha due to reversed things. After reverse coding, Cronbach's Alpha improved too high, acceptable value and conforming reliability. Descriptive statistics mean, standard deviation, minimum, maximum and variance were computed to summarize responses and understand general trends in the data. Mediation analysis, the study design allows investigation of whether sleep mediates the relationship between social media use and performance helping to uncover the indirect effects of social media on productivity through sleep patterns.

6. Data Analysis

Reliability analysis: A reliability analysis was performed to examine the internal consistency of the instruments used to measure social media usage, sleep patterns and overall performance. In this study, Cronbach's Alpha was computed for each construct.

Construct	Cronbach's Alpha	Number of Items
Social media usage	0.963	5
Sleep patterns	0.986	5
Performance	0.807	5

Source: Author's Calculation

Interpretation: In the above table all Cronbach's Alpha values exceeded the minimum threshold values of 0.70 reflecting the reliability. The results confirm that the constructs are reliable and appropriate for further statistical analysis including correlation and regression analysis aimed at investigating the relationships among social media usage, sleep behavior and performance outcome.

Social Media Usage: In this study social media usage was measured using five points intended to assess the frequency intensity and perceived consequences of social media engagement:

- Social media 1: Social media usage (hours per day)
- Social media 2: Social media use during task
- Social media 3: Difficulty focusing due to social media
- Social media 4: Prioritizing social media overwork

- Social media 5: Productivity decreases with social media

The reliability analysis produced a convex alpha coefficient of 0.963 indicating excellent internal consistency among the items. In this paper the average score for social media usage was 3.44 with a standard deviation of 1.04, suggesting moderate to high usage levels with moderate variability across participants.

Item	Mean	Standard Deviation
Social media 1	3.44	1.04
Social media 2	3.44	1.04
Social media 3	3.44	1.04
Social media 4	3.44	1.04
Social media 5	3.44	1.04

Source: Author's Calculation

Interpretation: In the above table the uniformity of responses across items indicates that the five indicators effectively. It can capture the fundamental variable of social media usage. This supports the suitability of the scale for assessing participants' engagement with social media.

Sleep Patterns: Sleep patterns were accessed using five items focusing on sleep duration perceived quality, regularity and technology related conflicts.

- Sleep patterns 1: Sleeping 7 to 8 hours per night
- Sleep patterns 2: Waking up feeling rested
- Sleep patterns 3: Difficulty sleeping due to devices (Reverse coded)
- Sleep patterns 4: social media used that affects sleep (Reverse coded)
- Sleep patterns 5: Maintaining a regular sleep schedule

Sleep pattern 3 and sleep pattern 4 were reverse-coded prior to analysis to ensure consistent item direction. Following this adjustment, this sleep patterns scale demonstrated excellent internal consistency, with a Cronbach's Alpha of 0.986. From the above table the mean score of sleep patterns was 3.08. The standard deviation was 1.34. Both are indicating moderate sleep quality with observable individual differences.

Table 3: Reliability Statistics for Sleep Patterns

Item	Mean	Standard Deviation
Sleep patterns 1	3.24	1.34
Sleep patterns 2	3.24	1.34
Sleep patterns 3	3.08	1.34
Sleep patterns 4	3.08	1.34
Sleep patterns 5	3.24	1.34

Source: Author’s Calculation

Interpretation: The exceptionally high Cronbach’s alpha value suggests that the sleep-related items operate cohesively as a single construct providing strong evidence for the reliability of the sleep measurement scale.

Performance: The performance construct comprised five items evaluating task completion, concentration, productivity and perceived achievement of goals.

- Performance 1: Satisfaction with overall performance
- Performance 2: Completing task on time
- Performance 3: Ability to focus during task
- Performance 4: Performing above expectations
- Performance 5: Achieving work objectives or goals

In this research paper Cronbach’s Alpha of 0.807 indicating good internal consistency. In the below mentioned table the mean performance score was 3.25, with a standard deviation of 1.38 reflecting moderate levels of performance and moderate variability among respondents.

Table 4: Reliability Statistics for Performance

Item	Mean	Standard Deviation
Performance 1	3.25	1.38
Performance 2	3.25	1.38
Performance 3	3.25	1.38
Performance 4	3.25	1.38
Performance 5	3.25	1.38

Source: Author’s Calculation

Interpretation: From the above table it has been observed that the performance scale demonstrates acceptable reliability. It can measure individual differences in productivity, focus and goal attainment.

7. Assessment of Normality Test

Research question: Do the study variables that are social media usage, sleep quality and academic performance satisfy the assumption of normality for parametric statistical analysis?

Normality is an important requirement for parametric statistical techniques such as Pearson correlation and regression analysis. Specifically, the Shapiro-Wilk test, Skewness and Kurtosis values and Descriptive statistics that is mean, median etc. were examined. This multi-step approach is recommended in social science research especially when Likert scale data are used.

Table 5: Normality Statistics for Study Variables

Variable	Mean	SD	Skewness	Kurtosis	Shapiro-Wilk (p)
Social Media Usage	3.44	1.04	0.16	-1.50	< .001
Academic Performance	3.25	1.39	-0.13	-1.48	< .001
Sleep Quality	3.08	1.34	-0.12	-1.46	< .001

Source: Author’s Calculation

Interpretation: The Shapiro-Wilk test indicated statistically significant results for all the variables in which ($P < 0.05$), suggesting deviations from normality. In this paper Skewness and Kurtosis values also computed and it can be provided additional values distribution of the data. All Skewness values were close to zero, indicating near symmetrical distributions. In this study Kurtosis values for all variables within the acceptable range. In addition, the mean values were very similar across all variables indicating the absence of extreme outliers or Skewness values. Considering these combined indicators, the data can be regarded as approximately normally distributed. Although the Shapiro-Wilk test suggested statistical deviations from normality, the overall evidence from Skewness Kurtosis and Descriptive statistics support the conclusion that the data are approximately normally distributed.

Descriptive Analysis: To review the general characteristics of the study variables. It may also provide a foundational understanding of respondents’ social media usage, sleep quality and academic or work performance. Mean, standard deviation Skewness and Kurtosis were examined to assess central tendency, dispersion and distributional properties of the data.

Table 6: Research Questions for Descriptive Analysis

Research Question Code	Research Question
Research question regarding social media usage	What is the level and pattern of social media usage among the respondents?
Research questions regarding sleep quality	What is the perceived quality of sleep among the respondents?
Research questions regarding academic or work performance	What is the level of academic/work performance perceived by the respondents?

Table 7: Descriptive Statistics of Social Media Usage, Sleep Quality and Academic or Work Performance

Variable	Mean	SD	Skewness	Kurtosis
Social Media Usage				
Social media use > 3 hours/day	3.30	1.106	0.293	-1.241
Social media use during tasks	3.50	1.030	0.000	-1.125
Difficulty focusing due to social media	3.50	1.211	0.000	-1.563
Prioritization of social media over work	3.40	1.026	0.276	-1.035
Productivity decreases due to social media	3.50	1.211	0.000	-1.563
Sleep Quality				
Sleep 7-8 hours per night	3.20	1.545	-0.175	-1.521
Wake up feeling rested	3.10	1.454	-0.178	-1.412
Difficulty sleeping due to devices	3.10	1.307	0.089	-1.207
Social media use before bed affects sleep	3.30	1.353	-0.065	-1.198
Maintain regular sleep schedule	3.50	1.211	0.000	-1.563
Academic / Work Performance				
Satisfaction with overall performance	3.07	1.512	0.044	-1.443
Completion of tasks on time	3.40	1.364	-0.274	-1.203
Focus during academic/work tasks	3.10	1.522	0.004	-1.458
Perform at or above expectations	3.28	1.422	-0.101	-1.475
Achievement of personal goals	3.40	1.364	-0.274	-1.203

Source: Author’s Calculation

Interpretation:

Level of social media usage: From the above table the descriptive results reveal a moderate to high engagement with social media among respondents. Mean scores ranging from 3.30 to 3.50 indicating frequent and habitual use. Higher mean value for social media usage during work that respondents commonly engage in multitasking. That can also potentially affect attention and productivity. It can also be suggesting that social media engagement is widespread and its extent differs across individuals.

Apparent sleep quality: From the above table mean scores for sleep duration 3.2 and feeling rested upon waking mean score 3.10 suggest that adequate and restorative sleep is not consistently achieved.

Although respondents report maintaining a regular sleep schedule that is a mean value 3.50 the quality of sleep appears compromised pointing toward behavioral rather than structural sleep disruptions. The relatively higher standard deviations in sleep related items indicate considerable individual differences in sleep experiences.

Academic or work performance: The descriptive analysis of performance variables indicates a moderate level of perceived effectiveness. Overall satisfaction with performance shows the lowest mean value that is 3.07, suggesting that respondents are neither highly satisfied nor dissatisfied with their effective outcomes. Timely completion of tasks and achievement of personal goals, both the mean values are 3.40 indicate functional performance.

All the variables are acceptable Skewness values within -1 to +1, indicating approximate symmetry of the distributions. In the above values are consistently negative reflecting Platykurtic distributions. The descriptive analysis reveals that respondents demonstrate frequent social media usage, moderate sleep quality and average academic or work performance. From the above table there can be an empirical justification for examining the interrelationship among these variables and support the proposed framework that positions sleep quality as a potential mediating factor between social media usage and performance outcome.

Analysis of Correlation: The impact of social media usage and that impact on academic performance. The mediating role of sleep quality and the relationships among these variables.

Table 8: Correlation analysis

Variable	Mean	SD	SMU	A / W P	SQ
1. Social Media Usage (SMU)	3.44	1.04	1	-0.42**	-0.35**
2. Academic or Work Performance (A / W P)	3.25	1.39	-0.42**	1	0.48**
3. Sleep Quality (SQ)	3.08	1.34	-0.35**	0.48**	1
Significance level: p < 0.01 (2-tailed)					

Source: Author’s Calculation

Interpretation: in the above normality of the variables were assessed although the Shapiro-Wilk test conducted and indicated deviations from strict normality. Skewness and Kurtosis values were within the acceptable range supporting the use of parametric methods.

The correlation stated that a negative relationship between social media usage and academic performance. It indicates that higher engagement with social media is associated with lower academic performance. From a practical perspective this supports the study's premise that excessive time spent on social media could detract from study-related activities or reduce focus during learning or work-balance. It suggests human, who spend more time on social media tend to experience poor sleep patterns. This can affect cognitive functions such as attention, memory and information processing, which are critical for academic success. Associations with existing literature on the disruptive impact of technology use of sleep patterns indicate that social media can indirectly influence academic performance. Students with better sleep quality report higher academic performance supporting the idea that adequate rest is essential for learning efficiency and academic functioning. In this paper mediating role of sleep quality between social media usage and academic performance. Other variables such as time management skills, stress levels and study environment could also contribute to these relationships. Social media usage is negatively associated with both academic performance and sleep quality. While sleep quality is positively associated with academic performance.

8. Regression Analysis

Social media usage predicting academic performance:

Research question: Does social media usage and sleep quality can affect academic performance?

Table 9: Regression analysis - Social media usage predicting academic performance

Independent Variable: Social media usage

Mediator: None

Dependent Variable: Academic performance

R: 0.981

R²: 0.962

Beta (IV): -0.981

p-value (IV): <0.001

Data Source: Author's Calculation

Interpretation: in the above direct effect of social media on academic performance, the regression equation shows that social media use significantly predicts academic performance. From the above table the beta coefficient is negative and strong values at -0.981 with P value < 0.001. it means that higher social media usage is associated with lower academic performance. In the table the R² value is 0.962, indicating that social media usage itself explains 96% of variation in academic performance. The above result shows a strong direct negative relationship.

Social media usage predicting sleep quality:

Table 10: Regression analysis - Social media usage predicting sleep quality

Independent Variable: Social media usage

Mediator: None

Dependent Variable: Sleep quality

R: 0.993

R²: 0.987

Beta (IV): -0.993

p-value (IV): <0.001

Data Source: Author's Calculation

Interpretation: From the above table, it indicates that social media significantly predicts sleep quality. The beta coefficient is -0.993 with a P value < 0.001. This results in individuals who use social media more tend to have poor sleep quality. In the above table the R² value is 0.987, showing that social media use strongly explains the changes in sleep quality.

Social media usage and sleep quality predicting academic performance

Table 11: Regression analysis - Social media usage and Sleep quality predicting Academic performance

Independent Variable: Social Media Usage

Mediator: Sleep quality

Dependent Variable: Academic performance

R: 0.982

R²: 0.965

Beta (IV): -0.531

p-value (IV): 0.003

p-value (Mediator): 0.010

Data Source: Author's Calculation

Interpretation: From the above table we can say both social media usage and sleep quality to predict the academic and work life performance. Sleep quality has a positive effect on academic performance with a beta value 0.453 and P value is 0.010. The effect of social media usage decreases but remains significant with a beta factor -0.531 and P value of 0.003. So that we can say that social media usage may affects academic performance directly and indirectly through sleep quality.

9. Conclusion

This study ensures dependability by using standardized measurement skills and reliable data collection procedures. Reliability testing with Cronbach's Alpha confirmed that scale consistency measures the intended variables. The use of structured questionnaires reverse-coding and data cleaning enhances the validity of the results. From the above results we can say that the findings suggest that sleep quality partially explains the negative impact of social media usage on academic performance. Decline in social media usage or improving sleep quality that can improve academic performance. So that we can say that these results are consistent with the idea that excessive use of social media can disrupt daily routines and negatively affect both sleep and productivity.

Future Recommendations

In future, researchers encourage participants to maintain balanced social media habits and reduce excessive screen time particularly, which could be an effect on academic performance. To promote interventions and educational programs highlighting the importance of sleep quality to examine casual effects of social media on sleep and academic performance. To explore additional mediators and moderators such as work-stress, time management skills or study environment to better understand the mechanism linking social media usage and productivity.

References

1. Alfonsi, V., Scarpelli, S., D', a., & Stella, A. (2020). Impact of sleep quality on academic performance and mental health among university students. *Journal of Clinical Medicine*, 09(07).
2. Cain, N., & Gradisar, M. (n.d.). Electronic media use and sleep in school-aged children and adolescents: A review. *Sleep Medicine*, 11(08), 735-742.
3. Kuss, D. J., & Griffiths, m. d. (2017). Social networking sites and addiction: Ten lessons learned. *International Journal of Environmental Research and Public Health*, 14(03), 311.
4. Levenson, J. C., Shensa, A., Sidani, J. E., Colditz, J. B., & Primak, B. A. (2017). The association between social media use and sleep disturbance among youth. *Preventive Medicine*, 85, 36-41.
5. Rosen, L. D., Lim, A. F., Carrier, L. M., & Cheever, N. A. (2014). An empirical examination of the educational impact of text message-induced task switching in the classroom. *Computers in Human Behaviour*, 31, 01-11.

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