

The influence of smartphone addiction and teacher behavior on cyberloafing behavior

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Abstrak

Tujuan penelitian ini adalah untuk mengetahui: 1) pengaruh smartphone addiction terhadap perilaku cyberloafing di SMK Negeri 1 Banyudono; 2) pengaruh teacher behavior terhadap perilaku cyberloafing di SMK Negeri 1 Banyudono; 3) pengaruh smartphone addiction dan teacher behavior secara bersama sama terhadap perilaku cyberloafing di SMK Negeri 1 Banyudono. Penelitian ini merupakan penelitian kuantitatif jenis ex post facto. Populasi dalam penelitian ini adalah seluruh siswa kelas X Manajemen Perkantoran dan Layanan Bisnis yang berjumlah 72 siswa. Sampel pada penelitian ini menggunakan sampling jenuh. Teknik pengumpulan data dengan angket dan observasi. Teknik analisis data menggunakan analisis regresi linier berganda dengan bantuan SPSS versi 20. Hasil penelitian menunjukkan bahwa: 1) terdapat pengaruh smartphone addiction terhadap perilaku cyberloafing yang dibuktikan dengan nilai t tabel sebesar 4.274 ($4.274 > 1.994$); 2) terdapat pengaruh teacher behavior terhadap perilaku cyberloafing dibuktikan dengan nilai $t_{hitung} > t_{tabel}$ ($4,32 > 1,99$); 3) terdapat pengaruh positif dan signifikan smartphone addiction dan teacher behavior secara bersama sama terhadap perilaku cyberloafing dengan nilai $F_{hitung} > F_{tabel}$ ($15.53 > 3,12$). Persamaan Regresi penelitian ini adalah $\hat{Y} = -5.837 + 0,388X_1 + 0,485X_2$ dengan nilai Adjusted R Square sebesar 0,290 yang berarti variabel smartphone addiction dan teacher behavior mampu menjelaskan variabel perilaku cyberloafing sebesar 29%.

Kata kunci: Adiksi internet; distraksi digital; gaya mengajar guru

Abstract

This study examined: (1) the effect of smartphone addiction on cyberloafing behavior at SMK Negeri 1 Banyudono; (2) the effect of teacher behavior on cyberloafing behavior at SMK Negeri 1 Banyudono; and (3) the combined effect of smartphone addiction and teacher behavior on cyberloafing behavior at SMK Negeri 1 Banyudono. This quantitative ex post facto study involved all 72 tenth-grade students in the Office Management and Business Services program. The sample was determined through saturated sampling. Data were collected through questionnaires and observation, and analyzed using multiple linear regression analysis with SPSS version 20. Results indicated that: (1) smartphone addiction significantly influenced cyberloafing behavior ($t = 4.274, p < .001$); (2) teacher behavior significantly

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influenced cyberloafing behavior ($t = 3.232$, $p = .002$); and (3) smartphone addiction and teacher behavior jointly exerted a significant positive influence on cyberloafing behavior ($F = 15.533$, $p < .001$). The regression equation was $\hat{Y} = -5.837 + 0.388X_1 + 0.485X_2$, with an adjusted R^2 of .290, indicating that smartphone addiction and teacher behavior explained 29% of the variance in cyberloafing behavior.

Keywords: internet addiction; digital distraction; teacher teaching style

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Introduction

Internet penetration in Indonesia has increased annually. The Indonesian Internet Service Providers Association (APJII) reported that 215 million Indonesians were connected to the internet in 2023, rising to 221 million in 2024, representing a penetration rate of 79.50% (Nuzula & Fahmawati, 2024). Within educational contexts, internet usage has similarly increased. To support learning, many schools provide free internet access. While such access aims to enhance educational outcomes, students frequently use the internet for non-academic purposes during instructional time, leading to cyberloafing behavior.

Cyberloafing refers to the use of the internet for non-academic purposes during learning sessions (Akbulut et al., 2016). M. Zhang et al. (2024) defined cyberloafing as students' engagement in online activities unrelated to learning, which negatively impacts their academic performance. Students experiencing boredom during instruction often seek entertainment through internet activities unrelated to coursework, such as watching videos, accessing social media, and listening to music. Cyberloafing disrupts learning time and adversely affects academic achievement (Adawiyah, 2023), making it a critical problem requiring immediate attention.

Several factors contribute to cyberloafing behavior. Nuzula and Fahmawati (2024) identified internal factors (interest, emotions, cognition) and external factors (facilities, peer influence). Simanjuntak et al. (2022) highlighted additional factors including instructor characteristics, course content, learner attributes, and learning environment. Akbulut et al. (2016) operationalized cyberloafing through five indicators: sharing, shopping, real-time updating, accessing online content, and gaming/gambling. Cyberloafing is closely associated with electronic devices, particularly smartphones. While smartphones' advanced features facilitate daily activities, excessive use leads to smartphone addiction. Hidayanto et al. (2021) defined smartphone addiction as dependent behavior characterized by excessive reliance on smartphones in daily activities and diminished self-control. Excessive smartphone use results in negative consequences including declining academic performance, increased financial costs, disrupted interpersonal relationships, headaches, wrist or neck pain, and accidents (Adawiyah, 2023).

Empirical evidence suggests that smartphone addiction positively influences cyberloafing behavior. Saritepeci (2020) found that smartphone addiction was the most important predictor of cyberloafing among high school students, explaining 8.4% of the variance. Beyond smartphone addiction, instructors constitute another external factor contributing to cyberloafing. Teachers play crucial sociological and psychological roles in students' educational experiences (Niaga et al., 2019). Teachers must develop strategies that actively engage students in learning to redirect attention away from cyberloafing activities (Rana et al., 2019). Teacher behavior—defined as attitudes and actions reflecting superior pedagogical insight—encompasses continuous development of teaching ideas and their implementation in managing the teaching-learning process to optimize student learning (Standisyah et al., 2019). These behaviors include communication patterns with students, creative instructional design, and cultivation of inclusive and supportive classroom environments that enable students to maximize their potential.

Research Method

This study was conducted with tenth-grade students in the Office Management and Business Services program at SMK Negeri 1 Banyudono, located at Jalan Kuwiran No. 3, Banyudono District, Boyolali Regency, Central Java Province. The research site was selected due to identified cyberloafing problems. This quantitative ex post facto study examined causal relationships between smartphone addiction and teacher behavior as independent variables and cyberloafing behavior as the dependent variable. The study included two independent variables: smartphone addiction (X_1) and teacher behavior (X_2), and one dependent variable: cyberloafing behavior (Y).

Data were collected using closed-ended questionnaires distributed through Google Forms. The questionnaires employed a 5-point Likert scale with response options: Never, Rarely, Sometimes, Often, and Very Often. Respondents completed demographic information and responded to questionnaire items following provided instructions. All respondent information and responses were kept confidential and used solely for research purposes.

The research instruments were systematically constructed based on indicators representing each variable. Cyberloafing behavior was measured using the Cyberloafing Activities Scale (Five-Factor Cyberloafing Scale) developed by Akbulut et al. (2016), comprising five indicators: sharing, shopping, real-time updating, accessing online content, and gaming/gambling. Smartphone addiction was assessed using the Smartphone Addiction Proneness Scale (SAPS) developed by Kim et al. (2014) and modified by Kurniawan et al. (2016), encompassing six indicators: disturbance of adaptive functions, positive anticipation, withdrawal, cyberspace-oriented relationships, overuse, and tolerance. Teacher behavior was measured using the Teacher as Social Context Questionnaire (TASC-Q) developed by Ahn et al. (2018), consisting of three indicators: teacher involvement, structure, and autonomy support.

Prior to administration in the main study, the questionnaires were pilot-tested with 30 respondents not included in the research sample. Items were considered valid if significance values were less than .05 or calculated r values exceeded critical r values at the 5% significance level. Questionnaires were deemed reliable if Cronbach's alpha values exceeded .60. Validity and reliability testing using IBM SPSS Statistics 20 yielded the results presented in Table 1.

Table 1
Validity and Reability Test Results

Variable	Validity Test	Reliability Test
<i>Cyberloafing Behavior</i>	<i>11 of 13 items valid</i>	Reliable (0,829 > 0,6)
<i>Smartphone Addiction</i>	<i>12 of 13 items valid</i>	Reliable (0,904 > 0,6)
<i>Teacher Behavior</i>	<i>9 items valid</i>	Reliable (0,732 > 0,6)

The population comprised all 72 tenth-grade students in the Office Management and Business Services program at SMK Negeri 1 Banyudono. The sampling technique employed non-probability sampling with a saturated sampling approach, whereby the entire population constituted the research sample. This study analyzed relationships between independent and dependent variables using multiple linear regression analysis with IBM SPSS Statistics 20 software. Prior to data analysis, assumption tests were conducted including: (1) normality test to assess data distribution, (2) linearity test to determine linear relationships between independent and dependent variables, and (3) multicollinearity test to detect strong intercorrelations among independent variables.

After verifying all assumptions, hypothesis testing was conducted to determine acceptance or rejection of proposed hypotheses. Hypothesis testing included: t-test (partial test), F-test (simultaneous test), multiple linear regression analysis, coefficient of determination (R^2), and calculation of effective and relative contributions of each independent variable to the dependent variable.

Results and Discussion

Research Results

Descriptive statistical analysis of cyberloafing behavior revealed a minimum value of 12, maximum value of 38, mean of 21.33, and standard deviation of 6.66. This variable comprised 11 items measured on a 5-point Likert scale. Smartphone addiction showed a minimum score of 20, maximum score of 56, mean of 36.79, and standard deviation of 7.30, measured through 12 items on a 5-point Likert scale. Teacher behavior demonstrated a minimum score of 14, maximum score of 38, mean of 26.62, and standard deviation of 4.41, assessed through 9 items.

Residual normality testing using the Kolmogorov-Smirnov test yielded a significance value of .859, indicating normally distributed data ($p > .05$). Linearity testing revealed that smartphone addiction demonstrated a linear relationship with cyberloafing behavior (deviation from linearity $p = .480$). Similarly, teacher behavior showed a linear relationship with cyberloafing behavior (deviation from linearity $p = .293$).

Multicollinearity testing indicated that each independent variable had a tolerance value of 1.006 and VIF value of 0.994, confirming the absence of multicollinearity among independent variables. Table 2 presents the effects of each independent variable on the dependent variable.

Table 2
T-test Results

Variable	t-count	Sig.(p-value)
(constant)	1.157	.251
Smartphone Addiction	4.274	.000
Teacher Behavior	3.232	.002

Source: Data processed by researchers (2025)

Table 2 shows that smartphone addiction had a significance value $< .001$ and t value of 4.274, exceeding the critical value of 1.994. These results indicate that smartphone addiction exerted a significant positive effect on cyberloafing behavior. Teacher behavior demonstrated a significance value of .002 and t value of 3.232, also exceeding the critical value. Thus, teacher behavior significantly and positively influenced cyberloafing behavior. Table 3 presents the simultaneous effect of independent variables on the dependent variable.

Table 3
F-test Results

	Sum of Squares	df	Mean Square	F	Sig.
Regression	962.417	2	481.208	15.533	.000
Residual	2137.583	69	30.979		
Total	3100.000	71			

Source: Data processed by researchers (2025)

Table 3 reveals an F value of 15.533 with significance $< .001$, indicating that smartphone addiction and teacher behavior jointly exerted a significant effect on cyberloafing behavior. Table 4 presents multiple linear regression analysis results.

Table 4
Multiple Linear Regression Analysis Results

Model	Unstandardized Coefficients	
	B	Std. Error
(constant)	-5.837	5.043
Total Smartphone Addiction	.388	.091
Total Teacher Behavior	.485	.150

Source: Data processed by researchers (2025)

The regression equation derived from Table 4 is:

$$Y\text{-hat} = -5.837 + 0.388X_1 + 0.485X_2$$

The constant value of -5.837 indicates that when both X_1 (smartphone addiction) and X_2 (teacher behavior) equal zero, the predicted value of Y (cyberloafing behavior) is -5.837. The regression coefficient for X_1 of 0.388 indicates that each one-unit increase in smartphone addiction corresponds to a 0.388-unit increase in cyberloafing behavior. The regression coefficient for X_2 of 0.485 indicates that each one-unit increase in teacher behavior corresponds to a 0.485-unit increase in cyberloafing behavior, holding other variables constant. Table 5 presents the coefficient of determination results.

Table 5

Coefficient of Determination Results

R	R Square	Adjusted R Square	Std. Error of the Estimate
.557	.310	.290	5.566

Source: Data processed by researchers (2025)

Table 5 shows an adjusted R squared of .290, indicating that smartphone addiction and teacher behavior explained 29% of the variance in cyberloafing behavior, while the remaining 71% was attributable to other variables not examined in this study. Table 6 presents effective contribution calculations.

Table 6

Effective Contribution Results

Variable	Beta	Correlation Coefficient	R Square
X_1	0,429	0,454	31%
X_2	0,324	0,358	

Source: Data processed by researchers (2025)

Based on Table 6, the SE formula can be obtained as follows:

$$SE(X)\% = \beta_x \times r_{xy} \times 100\%$$

Based on this formula, the effective contribution of the smartphone addiction variable to cyberloafing behavior is 19.5% (calculated from $0.429 \times 0.454 \times 100\%$), while the effective contribution of the teacher behavior variable to cyberloafing behavior is 11.6% (calculated from $0.324 \times 0.358 \times 100\%$). The total effective contribution of the two independent variables is 31%, which corresponds to the previously calculated R^2 value. After calculating the effective contribution of each independent variable, the next step is to calculate the relative contribution of each independent variable using the following formula:

$$SR(X)\% = \frac{SE(X)\%}{R^2}$$

Based on this formula, the relative contribution of the smartphone addiction variable to cyberloafing is 0.63% (calculated from $19.5/31$), while the relative contribution of the teacher behavior variable to cyberloafing is 0.37% (calculated from $11.6/31$). The total relative contribution of both independent variables is equal to 100%.

Discussion

Data analysis revealed that smartphone addiction had a significance value $< .001$ and t value of 4.274, demonstrating that smartphone addiction significantly influenced cyberloafing behavior. These results support the alternative hypothesis. The significant positive relationship between smartphone addiction and cyberloafing behavior indicates that higher levels of smartphone dependence correspond to greater cyberloafing behavior among tenth-grade Office Management and Business Services students at SMK Negeri 1 Banyudono.

These findings align with research by Saritepeci (2020) and Gokcearlan et al. (2018). Saritepeci (2020) identified smartphone addiction as the most important predictor of cyberloafing behavior, explaining 8.4% of the total variance. Gokcearlan et al. (2018) found that smartphone addiction had a significant positive relationship with cyberloafing behavior ($t = 4.119$, $p < .001$).

The second hypothesis posited a significant positive relationship between teacher behavior and cyberloafing behavior among tenth-grade Office Management and Business Services students at SMK Negeri 1 Banyudono. Results showed a significance value of .002 and t value of 3.232, supporting the alternative hypothesis.

These findings contradict research by Lutfiyah (2018), which found a relationship between teaching methods and cyberloafing, but align with Varol and Yildirim (2019), who demonstrated that teacher instructional methods influence cyberloafing behavior. The significant positive relationship between teacher behavior and cyberloafing in this study suggests that certain teacher behaviors—particularly authoritarian teaching styles characterized by strict control—may increase student cyberloafing behavior.

The third hypothesis proposed that smartphone addiction and teacher behavior jointly influence cyberloafing behavior. Results revealed a significance value $< .001$ and F value of 15.533, confirming that smartphone addiction and teacher behavior simultaneously contributed to cyberloafing behavior among tenth-grade Office Management and Business Services students at SMK Negeri 1 Banyudono. The coefficient of determination (R^2) of .290 indicated that 29% of variance in cyberloafing behavior was explained by these independent variables, with the remaining 71% attributable to factors not examined in this study.

Conclusion

Based on data collection and analysis, three main conclusions emerged. First, smartphone addiction exerted a significant positive influence on cyberloafing behavior among tenth-grade Office Management and Business Services students at SMK Negeri 1 Banyudono ($t = 4.274$, $p < .001$). Higher levels of smartphone addiction corresponded to increased likelihood of student engagement in cyberloafing activities during instruction. Second, teacher behavior significantly and positively influenced cyberloafing behavior among tenth-grade Office Management and Business Services students at SMK Negeri 1 Banyudono ($t = 3.232$, $p = .002$). This relationship suggests that authoritarian teaching styles may increase student cyberloafing behavior. Third, smartphone addiction and teacher behavior jointly exerted a significant positive influence on cyberloafing behavior among tenth-grade Office Management and Business Services students at SMK Negeri 1 Banyudono ($F = 15.533$, $p < .001$), indicating that higher smartphone usage intensity combined with authoritarian teaching styles corresponds to increased cyberloafing behavior.

This study had several limitations, including restricted sample size, single research location, and limited explanatory power (smartphone addiction and teacher behavior explained only 29% of cyberloafing behavior variance). Future researchers should expand sample sizes and include multiple research sites to avoid overgeneralization. Additionally, investigating other variables with stronger influences on cyberloafing behavior, such as self-control or learning motivation, would enhance understanding of this phenomenon.

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