FoMO, Loneliness, Emotion Regulation, and Academic Burnout as Predictors of Problematic Smartphone Use (PSU) among Vocational High School Teachers

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Abstrack

The rapid growth of smartphone use offers many benefits but also raises risks of problematic smartphone use (PSU), which negatively affects psychological well-being, job performance, and social interaction. While prior research has largely focused on adolescents and university students, studies on teachers remain limited. To address this gap, the present study examined the effects of fear of missing out (FoMO), loneliness, emotion regulation, and academic burnout on PSU among vocational high school teachers in Bekasi Regency, Indonesia. Using a quantitative ex-post facto design, data were collected from 132 teachers selected through multistage random sampling. Instruments (SAS-SV, FoMO Scale, UCLA Loneliness Scale, ERQ, Academic Burnout Scale) demonstrated excellent validity and reliability ($\alpha = 0.923–0.973$). Multiple regression analysis indicated a significant effect ($F = 6.491$; $p < 0.001$) with $R^2 = 47\%$. Findings highlight the importance of digital well-being programs through adaptive emotional regulation, workload management, and healthy technology use.
Keywords: academic burnout, emotion regulation, FoMO, problematic smartphone use, vocational high school teachers

Abstrak

Pertumbuhan penggunaan smartphone yang pesat menawarkan banyak manfaat tetapi juga meningkatkan risiko penggunaan smartphone (PSU) yang bermasalah, yang berdampak negatif pada kesejahteraan psikologis, kinerja kerja, dan interaksi sosial. Sementara penelitian sebelumnya sebagian besar berfokus pada remaja dan mahasiswa, studi tentang guru tetap terbatas. Untuk mengatasi kesenjangan ini, penelitian ini meneliti efek fear of missing out (FoMO), kesepian, regulasi emosi, dan kelelahan akademik pada PSU di kalangan guru SMK di Kabupaten Bekasi, Indonesia. Dengan menggunakan desain ex-post facto kuantitatif, data dikumpulkan dari 132 guru yang dipilih melalui multistage random sampling. Instrumen (SAS-SV, Skala FoMO, Skala Kesepian UCLA, ERQ, Skala Kelelahan Akademik) menunjukkan validitas dan keandalan yang sangat baik ($\alpha = 0{,}923–0{,}973$). Analisis regresi berganda menunjukkan efek yang signifikan ($F = 6{,}491$; $p < 0{,}001$) dengan $R^2 = 47\%$. Temuan menyoroti pentingnya program kesejahteraan digital melalui regulasi emosional adaptif, manajemen beban kerja, dan penggunaan teknologi yang sehat.
Kata kunci: *kelelahan akademik, regulasi emosi, FoMO, penggunaan smartphone bermasalah, guru SMK*

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INTRODUCTION

In today's digital era, smartphones have become an inseparable part of everyday life, offering instant access to information, entertainment, and social communication. The number of smartphone users continues to grow worldwide, including in Indonesia, which recorded approximately 192.15 million users in 2022 (Sadya, 2023). Data from (Pusparisa, 2020) and (APJII), 2023) further illustrate this upward trend (see Figure 1).

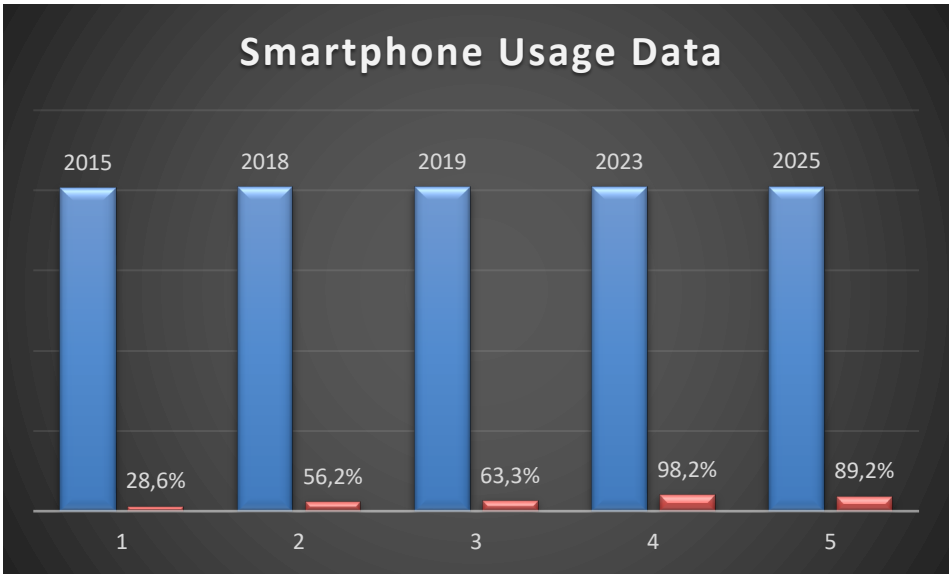

Figure 1. Data on smartphone user usage 2015-2025

Sadya (2023) smartphones increasingly dominate various aspects of life, particularly in education and social interaction. However, alongside their benefits, excessive smartphone use also presents new challenges, one of which is problematic smartphone use (PSU).

Problematic Smartphone Use (PSU) in the context of teaching refers to psychological and physical dependence on excessive smartphone use that disrupts teachers' mental well-being and academic performance. PSU among teachers, characterized by constant activity, is evident in behaviors such as repeatedly checking smartphones, using them for entertainment or distraction during work hours, and feeling anxious when not checking messages and notifications, even in the workplace or classroom. These behaviors often lead to disruptions in the fulfillment of teaching duties, reduced quality of student interactions, and decreased work effectiveness and efficiency.

PSU refers to excessive smartphone dependence, both psychologically and physically, which may disrupt daily functioning (Busch et al., 2021). Research has consistently demonstrated that PSU is associated with mental health issues such as anxiety, depression, sleep disturbance, reduced concentration, and lower academic performance (Yang et al., 2020;Ratan et al., 2021). Moreover, PSU has been linked to increased accident risk, disruptions in learning environments, and reduced workplace productivity (Kates et al., 2018; Dontre, 2021; Alan et al., 2022).

Several psychological factors are believed to contribute to PSU, including fear of missing out (FoMO), loneliness, emotion regulation, and academic burnout. FoMO refers to the anxiety arising from the fear of losing social experiences or essential information

(Elhai et al., 2025). This tendency often compels individuals to frequently check notifications and engage with social media, thereby reinforcing excessive smartphone use (Duke & Montag, 2017; Elhai et al., 2019). Academic burnout is another relevant factor. Teachers experiencing burnout often feel emotionally exhausted, develop cynicism toward their profession, and report decreased performance (Dyrbye et al., 2009; S. Zhang & Tu, 2018). In coping with stress and pressure, some teachers resort to smartphones as a form of distraction or entertainment, which may escalate into PSU when left unchecked.

Loneliness is also an important psychological predictor of technology-related addictive behaviors. Individuals who feel socially isolated may turn to smartphones as a form of social compensation (Wang et al., 2022). Among teachers, loneliness may arise from heavy workloads, limited social interactions outside school, or dissatisfaction with workplace relationships, ultimately leading to excessive smartphone use. Emotion regulation also plays a crucial role. Those who rely on maladaptive emotion regulation strategies are more likely to use smartphones as a way to escape from negative emotions or psychological distress (Elhai et al., 2019; Hoffner & Lee, 2015). Teachers dealing with occupational stress or interpersonal conflicts may thus be more vulnerable to PSU.

In educational settings, smartphones are a double-edged sword. On one hand, they can enhance teaching effectiveness and facilitate innovative learning (Fernandez, 2018) (Fernandez, 2018). On the other hand, uncontrolled use can hinder the learning process and impair cognitive functioning (Bjornsen & Archer, 2015; Ward et al., 2017).

The I-PACE (Interaction of Person-Affect-Cognition-Execution) model illustrates how psychological factors such as Fear of Missing Out (FoMO) and loneliness can exacerbate an individual's tendency to engage in smartphone-related addictive behaviors. Teachers who feel anxious about missing information or social interactions, as well as those who experience loneliness due to heavy workloads, are more likely to seek compensation through their smartphones. This creates a dependency that can lead to Problematic Smartphone Use (PSU), as the smartphone becomes a channel to fulfill unmet social and emotional needs in real life.

Furthermore, the Job Demands-Resources (JD-R) model explains the relationship between job demands and excessive smartphone use as a form of compensation. Teachers facing high workloads, emotional demands, and academic burnout may turn to their smartphones to alleviate stress or fatigue. Smartphone use as an escape mechanism ultimately leads to PSU, as they rely on technology to cope with the tension and pressure in their jobs.

Finally, difficulties in emotion regulation contribute to the exacerbation of PSU. Teachers struggling to manage negative emotions, such as stress or anxiety due to high job demands, often turn to their smartphones as an outlet. This may increase the likelihood of PSU, as smartphone use becomes a maladaptive coping mechanism rather than a healthy means of managing emotions.

This research fills a gap in the existing literature in several key ways. First, most prior studies have focused on university students or adolescents, leaving research on teachers, particularly in Indonesia, limited. Second, previous studies have primarily examined psychological factors individually, with little research investigating the simultaneous effects of FoMO, loneliness, emotion regulation, and academic burnout on problematic smartphone use (PSU). Third, the unique context of vocational school teachers in Indonesia, characterized by high work demands and expectations surrounding digitalization, has not been thoroughly explored in relation to PSU.

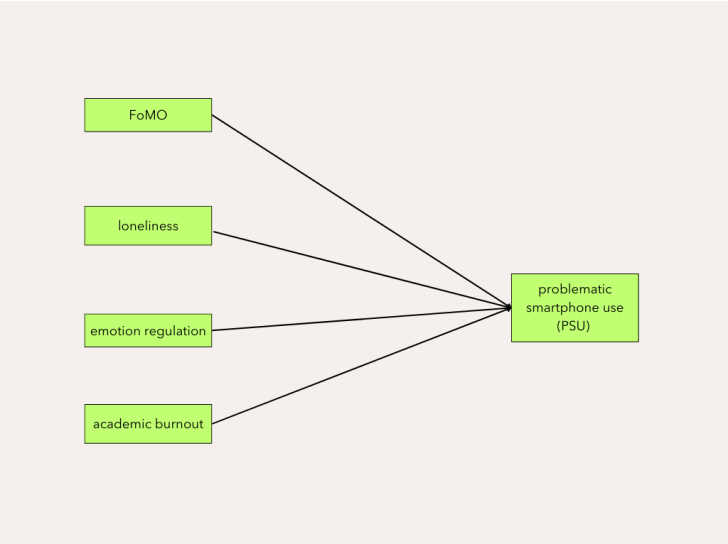

Figure 2. Framework for Thinking about Independent Variables Versus Dependent Variables

This study aims to examine the influence of Fear of Missing Out (FoMO), loneliness, emotion regulation, and academic burnout on PSU among vocational school teachers. The goal is to provide recommendations for educators, researchers, and policymakers in formulating effective interventions to mitigate the negative impact of PSU among teachers. The theoretical contribution of this study lies in introducing an integrative model that combines psychological factors and academic burnout to understand PSU. In contrast, the practical contribution involves offering strategies and recommendations for educational and mental health policies to prevent PSU. This study proposes five hypotheses to examine the effects of these factors on PSU, both individually and simultaneously. The conceptual model incorporates variables such as FoMO, loneliness, emotion regulation, and academic burnout as key predictors of PSU. To test these hypotheses, multiple linear regression was selected for its ability to assess the simultaneous impact of multiple independent variables on PSU and to evaluate the contribution of each factor, both individually and collectively.

METHOD

This study employed a quantitative approach with an ex-post facto research design (Hirose & Creswell, 2023). The research was conducted in Bekasi Regency, specifically at several vocational high schools. Given the large population size and the geographic spread of the population in Bekasi, a multistage random sampling technique was used. First, purposive sampling was used to select schools based on specific criteria, such as internet access quality and average smartphone use exceeding 4 hours per day, to represent urban schools with high connectivity. Second, following the guidelines of (Krejcie & Morgan, 1970), from a population of 200, a total of 132 teachers were determined as the sample. Finally, simple random sampling was used to select the individual participants.

The PSU instrument was adapted from the Smartphone Addiction Scale–Short Version (SAS-SV) (Kwon et al., 2013), which consists of five dimensions: 1) daily life disturbance, 2) withdrawal, 3) cyberspace-oriented relationships, 4) overuse, and 5)

tolerance. The scale included 10 Likert-type items ranging from 1 (strongly disagree) to 6 (strongly agree), with a Cronbach's Alpha coefficient of 0.923.

The FoMO scale was adapted from the Fear of Missing Out Scale (FoMOs) developed by Przybylski et al (2013), covering two dimensions: 1) unmet psychological needs for relatedness and 2) unmet psychological needs for self. The instrument contained 10 Likert-type items ranging from 1 (strongly agree) to 5 (strongly disagree), yielding a Cronbach's Alpha of 0.973.

The loneliness scale was adapted from the UCLA Loneliness Scale Version 3 (Russell, 1996), which measures two dimensions: (1) emotional isolation and (2) social isolation. This instrument comprised 20 items using a 4-point Likert scale ranging from 1 (very often) to 4 (never), with a Cronbach's Alpha of 0.963.

Emotion regulation was assessed using the Emotion Regulation Questionnaire (ERQ) (Gross & John, 2012), which evaluates two aspects of emotion regulation: (1) cognitive reappraisal and (2) expressive suppression. The instrument contained 10 items rated on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree), with a Cronbach's Alpha value of 0.940.

Academic burnout was measured using the Academic Burnout Scale, developed by Schaufeli et al (2002), consisting of three dimensions: (1) exhaustion, (2) cynicism, and (3) professional efficacy. The scale included 22 items on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree), with a Cronbach's Alpha coefficient of 0.968.

Content validity was established through expert judgment, in which competent experts evaluated the relevance and clarity of the items, and was complemented by readability testing with teachers. Item selection was conducted using Pearson product-moment correlation, with items exceeding the threshold of 0.30 retained (Azwar, 2017). Reliability was further assessed using Cronbach's Alpha, with a minimum acceptable value of 0.60 (Nurgiyantoro & Gunawan, 2017). Confirmatory factor analysis (CFA) was employed to confirm whether each construct was unidimensional and whether the indicators adequately represented the intended latent variables (Ghozali, 2017). Classical assumptions were tested for normality, multicollinearity, linearity, and heteroscedasticity tests (Santoso, 2015; Ghozali, 2017) , and the results were analyzed using SPSS version 23.

RESULT AND DISCUSSION

Result

The validity test applied in this study was content validity. Content validity is determined based on expert judgment and further verified using Gregory's formula. The instrument was evaluated by one academic expert, Rezky Graha Pratiwi, M. Psi, and one teacher, Ari Mustia, S. Pd, who conducted the readability assessment. Both evaluators were considered competent in the field relevant to the study (Gregory, 2004), as applied in this research, can be described as follows.

The results of the validation using Gregory's formula indicated that each variable, namely FoMO, loneliness, emotion regulation, academic burnout, and problematic smartphone use (PSU), achieved a score of 1, which falls into the category of very high validity. The reliability test in this study was carried out using Cronbach's Alpha formula. A scale is considered reliable if the Cronbach's Alpha coefficient is greater than 0.60 (Nurgiyantoro & Gunawan, 2017). According to Azwar (2022), a measurement instrument can be regarded as reliable if repeated administrations yield consistent results, showing only minimal variation when tested on the same group. The analysis results

showed that the Cronbach's Alpha coefficients were as follows: PSU = 0.923, FoMO = 0.973, loneliness = 0.963, emotion regulation = 0.940, and academic burnout = 0.968. Since all coefficients exceeded the threshold of 0.60, the five instruments used in this study were deemed reliable.

The Confirmatory Factor Analysis (CFA) conducted on the five research variables demonstrated that all instruments met the requirements for factor analysis. The KMO values for each variable were above 0.5, and Bartlett's Test of Sphericity was significant at $p < 0.05$, indicating that the data were suitable for further analysis. In addition, the Measure of Sampling Adequacy (MSA) values for all items exceeded 0.5, indicating that no items needed to be removed. Consequently, the valid items retained for this study consisted of 10 items for Problematic Smartphone Use (PSU), 10 items for Fear of Missing Out (FoMO), 20 items for Loneliness, 10 items for Emotion Regulation, and 22 items for Academic Burnout.

Furthermore, the results of the Rotated Component Matrix using varimax rotation revealed that all indicators across the variables had factor loadings greater than 0.5. This finding confirms that the factor structures of the five instruments were well-fitted, and each indicator was valid in representing its intended construct. In summary, all measurement scales employed in this study demonstrated construct validity and can be considered reliable tools for assessing PSU (Table 1), FoMO (Table 2), Loneliness (Table 3), Emotion Regulation (Table 4), and Academic Burnout (Table 5).

Table 1.

Rotated Component Matrix[a] Problematic Smartphone Use (PSU) Variable

Rotated Component Matrix[a]				
	Component			
	1	2	3	4
VAR00001		.874		
VAR00002		.880		
VAR00003				.815
VAR00004			.804	
VAR00005			.786	
VAR00006	.609			
VAR00007	.591			
VAR00008	.601			
VAR00009	.798			
VAR00010	.562			
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 4 iterations.				

Table 2.
Rotated Component Matrix[a] fear of missing out scale (FoMOs) Variable

Rotated Component Matrix[a]			
	Component		
	1	2	3
VAR00001	.797		
VAR00002	.762		
VAR00003		.720	
VAR00004	.650		
VAR00005	.585		
VAR00006			.738
VAR00007			.818
VAR00008		.787	
VAR00009		.639	
VAR00010		.631	
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 10 iterations.			

Table 3.
Rotated Component Matrix[a] Loneliness Variable

Rotated Component Matrix[a]						
	Component					
	1	2	3	4	5	6
VAR00001			.855			
VAR00002						.920
VAR00003			.743			
VAR00004			.778			
VAR00005			.639			
VAR00006		.639				
VAR00007	.674					
VAR00008				.770		
VAR00009		.765				
VAR00010	.606					
VAR00011		.854				
VAR00012		.853				
VAR00013				.654		
VAR00014					.923	
VAR00015					.903	
VAR00016	.719					
VAR00017	.856					
VAR00018	.848					
VAR00019		.706				
VAR00020	.659					
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.						
a. Rotation converged in 11 iterations.						

Table 4.
Rotated Component Matrix[a] Emotion Regulation Variables

Rotated Component Matrix[a]		
	Component	
	1	2
VAR00001	.535	
VAR00002	.871	
VAR00003	.784	
VAR00004	.784	
VAR00005	.761	
VAR00006	.743	
VAR00007		.689
VAR00008		.851
VAR00009		.703
VAR00010		.827
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.		
a. Rotation converged in 3 iterations.		

Table 5.
Rotated Component Matrix[a] Academic Burnout Variables

Rotated Component Matrix[a]			
	Component		
	1	2	3
VAR00001		.736	
VAR00002		.798	
VAR00003		.635	
VAR00004		.805	
VAR00005		.804	
VAR00006			.593
VAR00007		.751	
VAR00008		.671	
VAR00009		.690	
VAR00010	.621		
VAR00011	.724		
VAR00012	.837		
VAR00013	.802		
VAR00014	.890		
VAR00015	.794		
VAR00016	.822		
VAR00017	.870		
VAR00018			.638
VAR00019			.729
VAR00020			.826
VAR00021			.759
VAR00022			.732
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 5 iterations.			

Based on the descriptive analysis presented in Table 6, the Problematic Smartphone Use (PSU) variable had a mean of 52.70, a standard deviation of 3.324, a median of 52, and a mode of 52. The FoMO variable showed a mean of 39.65, a standard deviation of 2.924, a median of 40, and a mode of 40. The Loneliness variable had a mean of 57.81, a standard deviation of 5.459, a median of 57, and a mode of 54. Meanwhile, the Emotion Regulation variable had a mean of 46.73, a standard deviation of 7.707, a median of 44.50, and a mode of 44. The Academic Burnout variable had the highest average score (112.99), with a standard deviation of 18.360, a median of 114.50, and a mode of 88. In addition, Academic Burnout had the widest score range (74-148), whereas the smallest ranges were observed for PSU and FoMO (both 20).

Table 6.
Data Description Analysis Results

Statistics					
	PSU	FoMO	Loneliness	Emotional Regulation	Academic Burnout
Mean	52.70	39.65	57.81	46.73	112.99
Std. Error of Mean	.289	.254	.475	.671	1.598
Median	52.00	40.00	57.00	44.50	114.50
Mode	52	40	54	44	88[a]
Std. Deviation	3.324	2.924	5.459	7.707	18.360
Variance	11.049	8.549	29.804	59.402	337.092
Range	20	20	26	40	74
Minimum	40	30	46	30	74
Maximum	60	50	72	70	148

The normality test in Table 7 shows a significance value (p) = 0.200, which is greater than 0.05. This indicates that all variables fear of missing out (FoMO), loneliness, emotion regulation, academic burnout, and problematic smartphone use (PSU) are normally distributed.

Table 7.
Normality Test Results

		Unstandardized Residual
N		132
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	3.02884128
Most Extreme Differences	Absolute	.035
	Positive	.030
	Negative	-.035
Test Statistic		.035
Asymp. Sig. (2-tailed)		.200[c,d]

Meanwhile Table 8, the collinearity statistics demonstrate that all tolerance values are above 0.80 and VIF values are below 1.30 (FoMO: Tolerance = 0.885, VIF = 1.130;

Loneliness: Tolerance = 0.966, VIF = 1.035; Emotion Regulation: Tolerance = 0.827, VIF = 1.209; Academic Burnout: Tolerance = 0.802, VIF = 1.247). Table 8 indicates that the tolerance values for all variables exceed 0.10 and the VIF values are less than 10. Therefore, it can be concluded that there is no multicollinearity among the independent variables.

Table 8.
Multicollinearity Test Results

Variabel	Collinierity Statistics		Information
	Tolerance	VIF	
Fomo	.885	1.130	There is no multicollinearity
Loneliness	.966	1.035	There is no multicollinearity
Emotional Regulation	.827	1.209	There is no multicollinearity
Academic Burnout	.802	1.247	There is no multicollinearity

Table 9 presents the linearity testing results to examine the relationship between variables prior to regression analysis. The results revealed a significant linear association between Fear of Missing Out (FoMO) and Problematic Smartphone Use (PSU) ($F = 23.190$; $p < 0.05$), although a significant deviation from linearity was also detected ($F = 2.455$; $p < 0.05$). This indicates that the relationship between FoMO and PSU is nonlinear and exhibits a more complex pattern. In contrast, loneliness ($F = 2.161$; $p = 0.144$), emotion regulation ($F = 1.556$; $p = 0.215$), and academic burnout ($F = 0.228$; $p = 0.635$) did not show significant linear or nonlinear relationships with PSU ($p > 0.05$). Therefore, only FoMO demonstrated a notable association with PSU, although the relationship was not strictly linear.

Table 9.
Linearity Test Results

		F	Sig.
PSU * FoMO	Linearity	23.190	.000
	Deviation from Linearity	2.455	.005
PSU * Loneliness	Linearity	2.161	.144
	Deviation from Linearity	1.283	.202
PSU * Emotional Regulation	Linearity	1.556	.215
	Deviation from Linearity	1.131	.318
PSU * Academic Burnout	Linearity	.228	.635
	Deviation from Linearity	.999	.495

Based table 10, the results of the heteroscedasticity test using the Glejser method, the significance values (Sig.) for the FoMO variable (0.821), loneliness (0.581), and

emotion regulation (0.426) were all greater than 0.05. This indicates that these three variables do not exhibit heteroscedasticity. However, the academic burnout variable had a p-value of 0.000, which is below 0.05, suggesting the presence of heteroscedasticity. Therefore, it can be concluded that the regression model in this study is not entirely free of heteroscedasticity.

Table 10.
Heteroscedasticity Test Results

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	6.562	2.523		2.601	.010
	FoMO (X1)	.012	.053	.020	.227	.821
	Loneliness (X2)	.015	.027	.046	.554	.581
	Emotional Regulation (X3)	.017	.021	.072	.799	.426
	Academic Burnout (X4)	.040	.009	.409	4.489	.000
a. Dependent Variable: Abs_RES						

Based on Table 11, the Multiple Regression analysis indicates an F-statistic of 6.491 (p = 0.000). Since p < 0.05, it can be concluded that fear of missing out (FoMO), loneliness, emotion regulation, and academic burnout collectively predict problematic smartphone use (PSU).

Table 11.
Results of Multiple Regression Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	245.699	4	61.425	6.491	.000[b]
	Residual	1201.778	127	9.463		
	Total	1447.477	131			
a. Dependent Variable: PSU						
b. Predictors: (Constant), FoMO, Loneliness, Emotional Regulation, Academic Burnout						

Table 12. The regression analysis further indicates that the constant (intercept) is 40.641 (p = 0.000), meaning that when all independent variables are set to zero, the predicted PSU score is 40.641. Among the predictors, FoMO has a positive and significant effect on PSU (B = 0.446, Beta = 0.393, t = 4.570, p = 0.000), indicating that higher FoMO is associated with higher PSU. Loneliness also contributes positively (B = 0.064, Beta = 0.105, t = 1.279, p = 0.000), indicating its significant role in increasing PSU. Similarly, emotion regulation shows a positive though weaker influence (B = 0.026, Beta = 0.061, t = 0.687, p = 0.000). Lastly, academic burnout demonstrates a positive and significant effect on PSU (B = 0.028, Beta = 0.155, t = 1.716, p = 0.000). Overall, these

results confirm that all four variables significantly contribute to the prediction of problematic smartphone use.

The regression analysis in Table 13, using the equation Y = a + b1X1 + b2X2 + b3X3 + b4X4, produces the following model: Y = 40.641 + 0.446(X1) + 0.064(X2) + 0.026(X3) + 0.028(X4). This equation indicates that when FoMO, loneliness, emotion regulation, and academic burnout are all zero, the predicted level of Problematic Smartphone Use (PSU) equals the constant 40.641. Each one-unit increase in FoMO increases PSU by 0.446; loneliness increases PSU by 0.064; emotion regulation increases PSU by 0.026; and academic burnout increases PSU by 0.028. Among these predictors, FoMO exerts the strongest influence on PSU compared to the other variables.

Table 12.
Summary of Correlation Coefficients of Independent Variables Against Dependent Variables

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	40.641	4.631		8.776	.000
	FoMO	.446	.098	.393	4.570	.000
	Loneliness	.064	.050	.105	1.279	.000
	Emotional Regulation	.026	.038	.061	.687	.000
	Academic Burnout	.028	.016	.155	1.716	.000

a. Dependent Variable: PSU

Based on the regression test results in the table model summary, an R value of 0.412 was obtained, indicating a positive relationship between FOMO, loneliness, emotional regulation, and academic fatigue and Problematic Smartphone Use (PSU). The R Square value of 0.470 suggests that the four independent variables account for 47.0% of the variation in PSU, with the remaining 53.0% attributable to factors not included in this study. In addition, the Adjusted R Square value of 0.144 indicates that, considering the number of predictors and sample size, the actual contribution of these variables to PSU is only 14.4%. Thus, it can be concluded that FOMO, balance, emotional regulation, and academic fatigue influence PSU; however, other factors remain.

Table 13.
Coefficient of Determination results (R^2)

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.412[a]	.470	.144	3.076

a. Predictors: (Constant), FoMO, Loneliness, Emotional Regulation, Academic Burnout

b. Dependent Variable: PSU

Discussion

Problematic Smartphone Use (PSU) is a persistent, maladaptive pattern of smartphone engagement that disrupts functional roles, such as work and social relationships. Although PSU is often discussed alongside smartphone addiction, it is not entirely synonymous with it. Existing literature highlights that PSU arises from the interaction of affective factors (e.g., FoMO and loneliness), difficulties in self-regulation and emotional control, and stress and fatigue, all of which operate in a bidirectional feedback loop. In secondary and vocational schools, work-related pressures and classroom digital distractions are salient triggers for teachers. Survey-based evidence further indicates that mobile phone–related classroom disturbances are a prominent issue, indirectly increasing classroom management stress and workload, thereby heightening psychological fatigue and dysfunctional digital coping strategies (Hatfield, 2024).

Fear of Missing Out (FoMO), the anxiety of being excluded from important interactions or information, has consistently been identified as a strong correlate of PSU. Recent meta-analyses and empirical studies suggest that FoMO undermines executive functioning and self-control, thereby reinforcing compulsive checking and excessive monitoring of notifications. For teachers, this is especially relevant, as professional expectations often require them to remain connected with work groups or parents, thereby reinforcing compulsive patterns of smartphone engagement even beyond formal working hours. Findings reported indicate that higher FoMO levels are associated with stronger tendencies toward problematic smartphone use, mediated by impaired self-control. Other studies similarly position FoMO as a central construct in various technology-related addictions, including internet, smartphone, and social media use (Akbari et al., 2021; Y. Zhang et al., 2023).

Among teachers, FoMO can stem from professional and social obligations, such as the need to constantly monitor school WhatsApp groups, email, or social media platforms to avoid missing academic or administrative updates. This heightened connectivity often results in compulsive checking, a defining feature of PSU. Empirical findings confirm FoMO as a robust predictor of PSU. For example, (Elhai et al., 2025) demonstrated that FoMO significantly increases smartphone engagement, particularly compulsive social media use, as individuals attempt to avoid missing out on social interaction or new information. This is exacerbated in teachers, who are professionally expected to remain responsive to digital communications from multiple stakeholders.

Furthermore Rozgonjuk et al (2020), it highlighted that FoMO is not only associated with the frequency of smartphone use but also with its problematic quality. Individuals with elevated FoMO are more likely to use smartphones excessively without clear purpose, thereby lowering productivity and increasing digital fatigue. For teachers, this translates into diminished instructional focus, heightened stress from digital multitasking, and greater psychological burden. Longitudinal findings Wolniewicz et al (2018) further emphasize FoMO's predictive role in smartphone addiction, suggesting that FoMO is not merely a by-product of PSU but also a causal mechanism that reinforces dependence. Among teachers, professional digital vigilance may gradually become compulsive, disrupting work–life balance.

Loneliness has also been consistently linked with problematic media use, including smartphones. Longitudinal evidence shows that loneliness often precedes compensatory digital engagement, sustaining a cycle of withdrawal from face-to-face interactions and reinforcing PSU. For teachers, professional isolation, such as heavy administrative workload and limited collegial interaction, may drive reliance on smartphones as a substitute for meaningful social connection (Fam & Männikkö, 2025).

Loneliness in the teaching context refers to feelings of lacking meaningful social bonds despite being embedded in a professional environment. Empirical studies confirm that lonely individuals often turn to smartphones for social compensation. This pattern is both frequent and maladaptive (e.g., compulsive notification checking and aimless scrolling), which heightens the risk of PSU (Horwood & Anglim, 2021). Research further demonstrates that loneliness is the link between academic stress and PSU. For instance, Shen & Wang (2019) found that loneliness mediated the association between academic stress and PSU among Chinese university students. Similarly, (Sun et al., 2023) reported that loneliness was significantly correlated with PSU, with negative implications for social relationships and overall life satisfaction.

Emotional regulation difficulties, such as impulsivity and poor reappraisal strategies, are also strongly associated with PSU. Individuals who struggle to regulate negative affect tend to rely on smartphones for rapid mood repair, thereby reducing opportunities for healthier emotion regulation. Evidence indicates that emotional dysregulation predicts PSU beyond personality factors, with both adolescent and adult samples showing that deficits in emotion regulation act as early risk factors for PSU and as mediators between anxiety and smartphone overuse. For teachers, classroom stressors, grading demands, and administrative pressures may trigger screen-based coping behaviors (Fu et al., 2020; Horwood & Anglim, 2021).

Emotion regulation refers to the ability to identify, modulate, and express emotions adaptively. Teachers at the vocational level, who often face complex classroom dynamics and heavy workloads, require this skill to maintain psychological balance. Teachers who struggle with regulation may resort to quick-relief strategies via smartphone use (e.g., browsing social media or streaming videos), a maladaptive coping pattern that provides temporary relief but heightens the risk of PSU. Longitudinal work (Extremera et al., 2019) has shown that poor emotion regulation predicts PSU over time, especially through mechanisms such as mood modification and habitual checking. Teachers experiencing emotional strain in classrooms may fall into this cycle: stress triggers smartphone use as a distraction, producing temporary relief that reinforces the behavior and gradually evolves into PSU.

Academic burnout is another critical risk factor. Burnout, often experienced by teachers in secondary or vocational schools, arises from heavy workloads, excessive

administrative demands, and pressure to meet curriculum and parental expectations. Symptoms include emotional exhaustion, depersonalization, cynicism toward teaching, and diminished personal accomplishment. These symptoms not only undermine teaching motivation but also increase vulnerability to maladaptive coping, such as excessive smartphone use. The Compensatory Internet Use Theory supports this, positing that individuals often engage in compulsive digital use to cope with stress or negative affect (Kardefelt-Winther, 2014).

Empirical studies have confirmed that burnout is a predictor of PSU. For instance, Li et al (2021) found that teachers and students experiencing higher levels of burnout were more likely to engage in compulsive smartphone use. Similarly Zhu et al (2023), strong associations were observed among university students between physical fatigue, academic exhaustion, and PSU. These findings emphasize that unmanaged fatigue exacerbates PSU tendencies, ultimately diminishing quality of life. For educators, this suggests that addressing psychological well-being and stress management is as critical as academic performance goals, given their direct impact on teachers' and students' digital habits and risk of PSU.

CONCLUSION

This study highlights the significant impact of psychosocial factors on problematic smartphone use (PSU) among vocational school teachers. Fear of missing out (FoMO), loneliness, emotion regulation difficulties, and academic fatigue all contribute to teachers' compulsive smartphone use. Teachers experiencing high FoMO use their smartphones excessively to stay connected, while loneliness drives smartphone use as a coping mechanism. Poor emotion regulation and academic fatigue further exacerbate this behavior, as smartphones provide an escape from negative emotions. The study suggests that teachers should adopt more effective emotion-regulation strategies and that schools should provide psychological support and manage workloads appropriately. Future research should examine additional factors, such as social support and emotional intelligence, to better understand PSU among teachers.

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