

Understanding cyberloafing in higher education: the role of fear of missing out and smartphone addiction

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Quarterly Review
of Distance
Education

Received 11 May 2026

Revised 18 June 2026

Accepted 9 July 2026

Abstract

Purpose – Guided by the Interaction of Person-Affect-Cognition-Execution (I-PACE) framework, this paper will examine the predictive role of fear of missing out (FoMO) and smartphone addiction on cyberloafing among university students in India.

Design/methodology/approach – The study employed a quantitative, predictive correlational research design. Data were collected from 306 university students enrolled at a state university in Haryana, India, through a structured online questionnaire. The statistical analysis was performed with the help of SPSS Version 22, with descriptive statistics, Pearson correlation and multiple regression analysis, to assess the correlation between the variables.

Findings – The findings indicate that psychological (FoMO) and behavioral (smartphone addiction) factors are major causes of cyberloafing in institutions of higher education.

Practical implications – This study has significant implications for higher education. Institutions need to establish policies that can control smartphone use in classrooms and enhance discipline among students. To help university students address their FoMO, administrators should set up programs to raise awareness and enhance student engagement.

Originality/value – This paper builds upon the existing literature by showing that FoMO and smartphone addiction have a significant independent effect on cyberloafing in the Indian higher education scenario, providing a more profound insight into how digital distraction impacts students.

Keywords Fear of missing out, Smartphone addiction, Cyberloafing, Higher education, Academic distraction, Student behavior

Paper type Research article

1. Introduction

The presence of information and communication technologies has transformed access, processing and use of academic content by higher education students. The introduction of smartphones and access to the web at any time and place deprived students of spatial and temporal boundaries to connect to the web, implying that many began to alternate between academic digital activities on the one hand, and non-academic (non-productive) digital activities in other contexts. As the learning and entertaining environments continue to converge because of social media, chat applications and video-related websites, cyberloafing, the use of electronic devices in a non-academic manner during the classroom sessions, has become a widespread behavioral trend in the educational environment. Initially theorized in the course of workplace studies, cyberloafing has also gained much popularity among educators because of its effects on academic concentration, learning quality and classroom interactions (Lim, 2002; Garrett & Danziger, 2008).

The so-called wired generation is also characterized by high dependence on digital devices among higher education students in their academic and social activities (Margaryan & Littlejohn, 2008). Smartphones are very convenient and can be carried everywhere, which fosters the disposition to spend more time online and adds to the threat of harmful or excessive use of the internet among young adults (Wacks & Weinstein, 2021). According to the growing number of publications, smartphone addiction is associated with the inability to pay attention, poor sleep, poor performance, stress and deteriorated mental health (Hawi & Samaha, 2017; Lepp, Barkley, & Karpinski, 2015).



Quarterly Review of Distance Education

© Emerald Publishing Limited

e-ISSN: 2169-1266

p-ISSN: 1528-3518

DOI 10.1108/QRDE-05-2026-0028

The Fear of Missing Out (FoMO) is considered one of the psychological reasons for such overuse, that is the anxiety of being cut off from social updates or online communication (Przybylski, Murayama, DeHaan, & Gladwell, 2013). FoMO makes the desire to check something uncontrollable, leading students to use social media and messaging applications even in the lecture room, which also results in frequent instances of digital disruptiveness (Al-Furaih & Al-Awidi, 2021).

These addictive practices of going online directly impact cyberloafing in educational institutions. Cyberloafing, including social media use, communication with peers, online shopping and streaming entertainment, interferes with the use of cognitive resources needed to engage in productive learning and disrupts long-term attention and engagement (Ravizza, Hambrick, & Fenn, 2014; Mendoza, Pody, Lee, Kim, & McDonough, 2018).

Although there has been some evidence to suggest that limited cyberloafing may be a temporary coping strategy in an attempt to counteract boredom or cognitive exhaustion (Metin-Orta and Dilek Demirtepe-Saygili, 2023; Lim & Chen, 2012), the overwhelming number of studies points to the negative effect of cyberloafing on academic success, self-control, motivation and cognitive efficiency.

The easy availability of the internet and the sharp increase in low-priced smartphones in the Indian higher education setting have compounded the online addiction of the students. The Indian population of young smartphone users is among the highest, and the daily number of individuals who watch social media and short-video applications is appalling among college-age students (Internet and Mobile Association of India and Kantar, 2023; Telecom Regulatory Authority of India, 2022). Along with the post-pandemic transition to online, hybrid and technology-mediated learning settings, Indian university students have started depending on smartphones for matters of academic communication and getting lectures, as well as being constantly socially connected. It has made online classes as well as in-person classes more prone to compulsive use, FoMO based behaviors and cyberloafing due to this endless connection to the internet.

However, empirical literature has not been conducted to thoroughly examine the connection between smartphone addiction, FoMO and cyberloafing within the framework of the Indian higher education. In this way, there is a necessity to have one framework in order to understand how the processes happen whereby digital dependence and socio-emotional motivators are the cause of cyberloafing among higher education students in India.

2. Literature review

Mobile technologies in academic settings have fundamentally altered the trends in attention, digital behavior and cognitive engagement of students. The rise of smartphones has resulted in a pattern of constant alternation between academic and non-academic online activities, which has been repeatedly associated with the loss of focus, loss of self-regulation and increased distractibility among university students (Przybylski *et al.*, 2013; Elhai, Levine, Dvorak, & Hall, 2016; Samaha & Hawi, 2016). These behavioral changes have been directly linked with psychological constructs like FoMO, compulsive smartphone use and cyberloafing, which, together, affect academic performance, emotional well-being, and general engagement (Alt, 2015; Buglass, Binder, Betts, & Underwood, 2017; Elsayed & Hala, 2025).

FoMO has become a well-known socio-emotional phenomenon that can be described as the necessity to stay connected all the time and the anxiety that one might be missing out on some essential social experiences (Przybylski *et al.*, 2013). studies indicate that students with high FoMO have difficulties with unwinding social media, have repetitive behavioral tendencies of checking notifications and become anxious when they lack access to social media. Such behaviors greatly affect concentration in school since students often tend to divert their attention to Internet socialization when studying or attending classes (Al-Furaih & Al-Awidi, 2021; Jin, Xiong, Liu, & An, 2023).

FoMO-induced compulsive checking can easily escalate into dependency, which adds to the addiction to smartphones. The symptoms of smartphone addiction also include impaired control, excessive use, withdrawal-like symptoms and interference with daily functioning aspects (Kwon *et al.*, 2013). Studies have consistently shown that participants with high FoMO are more dependent on smartphones (Elhai *et al.*, 2016; Matthes *et al.*, 2023). Adolescents often use smartphones to cope with boredom, stress, loneliness and academic pressure (Samaha & Hawi, 2016; Horwood & Anglim, 2019). Longitudinal data also show that smartphone addiction is predictive of poor academic achievement, decreased attention and emotional burnout (Lepp *et al.*, 2015; Demirci, Akgönül, & Akpınar, 2015). In the Indian context, with greater access to low-cost mobile data and heavy social media use and short-video platforms, an increasing number of university students have become compulsively dependent on smartphones (Davey & Davey, 2014).

With an increasing dependency on smartphones, cyberloafing is becoming more prevalent. Habitual smartphone use, low self-control and emotional triggers (boredom or stress) are strongly linked to cyberloafing, which is defined as the use of digital devices during instructional time, not related to academic tasks (Lim, 2002; Metin-Orta & Demirtepe-Saygılı, 2023). When students are distracted by academic work, they do such things as using social media, watching entertainment, chatting and purchasing products online. Empirical research proves that cyberloafing diminishes understanding, decreases academic performance and disrupts the process of memory consolidation (Ravizza *et al.*, 2014; Mendoza *et al.*, 2018). According to a recent bibliometric study, smartphone addiction has been identified as one of the greatest predictors of cyberloafing behavior in the higher-education context in relation to behavioral predictors (Kumar, Akhouri, Yadav, & Chauhan, 2025).

Theoretical frameworks also support this pathway. The I-PACE model suggests that addictive digital behaviors are a result of emotional predispositions (including FoMO), cognitive biases and impaired executive control (Brand, Young, Laier, Wölfling, & Potenza, 2016). Similarly, Compensatory Internet Use Theory postulates that people use the internet in an overabundant fashion to address emotional distress, which supports addictive dependence (Kuss *et al.*, 2017). All these theories help to support the hypothesis that FoMO causes compulsive checking, leading to an increased risk of smartphone addiction, resulting in cyberloafing behaviors during studies.

The present study involved students enrolled in a traditional university program, but with a mix of online and technology-mediated learning activities. The students are often using learning management systems, online tools, virtual classrooms and communication platforms in the modern day's higher education. Therefore, the factors that contribute to cyberloafing have relevance beyond the classroom environment and in the online, hybrid and distance learning environment where technology is central to learning.

Despite various studies on FoMO, smartphone addiction and cyberloafing being conducted internationally, the relationship between the three has limited explored thoroughly, especially in the Indian higher-education setting. To begin with, these constructs have been mostly studied separately, without integrating them into a single explanatory model. In addition, much of the existing evidence comes from Western and East-Asian contexts, leaving a limited understanding of how these relationships operate among Indian university students, whose digital usage patterns differ considerably (Davey & Davey, 2014).

Moreover, little is known about how behaviors associated with technology may shape student engagement in increasingly digital and technology-mediated learning environments, including online and distance education settings.

Considering this gap, the current study will explore relationships among smartphone addiction, FoMO and cyberloafing in the Indian higher education setting. The paper aims to provide a coherent viewpoint on the contribution of compulsive smartphone use and FoMO-induced online interaction to the cyberloafing tendencies of the students. The findings of this exploration should guide institutional policies to facilitate conscious consumption of

technology, enhance academic interaction and cut down digital disruptions in modern Indian university settings.

Having explored the literature on the topic and determined the gap in the current knowledge, it is clear that a more unified model combining FoMO, smartphone addiction and cyberloafing is required to gain a deeper insight into how psychological and behavioral factors interact to contribute to academic disengagement in the case of Indian university students. Based on these gaps, the following research hypotheses were developed in the present study:

Hypotheses of the study.

H1. FoMO is positively associated with cyberloafing.

H2. Smartphone addiction is positively associated with cyberloafing.

H3. FoMO is positively associated with smartphone addiction.

3. Research methodology

3.1 Research design

This study implemented a quantitative, predictive correlational research design to examine the relationships between FoMO, smartphone addiction and cyberloafing among university students. The study focuses on assessing the direct effects of FoMO and smartphone addiction on cyberloafing behavior.

3.2 Participants

This study was conducted with the participation of 306 students who continue their higher education at a university in Haryana, India, and were reached through the convenience sampling method. The data used in the research were collected in the 2025–2026 academic year (see [Table 1](#)).

3.3 Data collection procedure

Before the study, participants were informed about the study aim, confidentiality measures and their free will to contribute or to drop out anytime. After, students were asked to fill out the survey with the help of electronic informed consent. The distributed Google Forms links were through communication channels and groups of students at the university. The online format provided convenience and allowed students to answer at their convenience, without a time constraint. No personally identifiable data were gathered, and there was full anonymity of responses.

The responses of the completed Google Forms were downloaded in the form of a spreadsheet and filtered in order to be accurate and complete. Cases that have a large amount of missing data or that show inconsistency in responses were eliminated before analysis. The data were then cleaned and imported into SPSS Version 22 for statistical processing. Descriptive statistics, Pearson correlations, multiple regression, testing of assumptions (normality and multicollinearity) and mediation were conducted. According to the aims of the study, every data collection process was in compliance with ethical research protocols and provided the privacy of participants in the process.

3.4 Instruments

3.4.1 Demographic form. A Personal Information Form was given to collect demographic data about the participants. The form was used to gather information about the students on their age, gender, number of hours spent on the internet daily, the device they used to access the internet and usage of Wi-Fi on campus. This form helped in familiarizing oneself with the overall characteristics and technology use patterns of the respondents.

Table 1. The demographic data of the research group

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	157	51.3%
	Female	148	48.4%
	Other	1	0.3%
Academic level	Undergraduate	251	82.0%
	Postgraduate	55	18.0%
Year of study	1st Year	168	54.9%
	2nd Year	133	43.5%
	3rd Year	5	1.6%
Hometown background	Urban	163	53.3%
	Semi-Urban	24	7.8%
	Rural	119	38.9%
Current residence	Hostel	69	22.5%
	Day-Scholar (Lives with Family)	203	66.3%
	Paying Guest	19	6.2%
	Other	15	4.9%
Average daily internet usage	Less than 2 hours	36	11.8%
	2–4 hours	152	49.7%
	4–6 hours	80	26.1%
	More than 6 hours	38	12.4%
Primary device used	Smartphone	289	94.4%
	Laptop	15	4.9%
	Tablet	1	0.3%
	Desktop	1	0.3%

Note(s): Table 1 shows that that 51.3% were male ($n = 157$) and 48.4% were female ($n = 148$), with only 0.3% identifying as “other”. Most respondents were undergraduate students (82%), while 18% were enrolled in postgraduate programs. Regarding year of study, 54.9% were first-year students, 43.5% were in their second year and 1.6% were in their third year. In terms of hometown background, 53.3% belonged to urban areas, 7.8% to semi-urban regions and 38.9% to rural areas

With respect to residence status, the majority were day-scholars living with family (66.3%), followed by hostel residents (22.5%), paying guests (6.2%) and others (4.9%). The use of the internet patterns indicated that 49.7 per cent of the students spent 2–4 hours a day online. 26.1% reported 4–6 hours, 12.4% exceeded 6 hours and 11.8% used it for less than 2 hours. Notably, 94.4% of them used smartphones as the main means of accessing the internet, followed by laptops (4.9%), tablets (0.3%) and desktops (0.3%) being much less common

Source(s): Authors’ own work

3.4.2 Fear of Missing Out Scale. The FoMO was assessed with eight items of the FOMO Scale, created by Przybylski *et al.* (2013). The scale consisted of a 5-point Likert scale, 1 (Strongly Disagree) to 5 (Strongly Agree). The score is greater the degree of FoMO.

The FoMO scale provided in this research had a Cronbach’s $\alpha = 0.728$, although this is above the generally agreed upon minimum threshold of $= 0.70$ (Peterson, 1994). This means that the scale has acceptable internal consistency and is acceptable to be utilized in both behavioral and social science research studies.

3.4.3 Smartphone Addiction Scale. The 8-item scale used to measure Smartphone addiction was rated using a 6-point Likert response scale (1 = Strongly Disagree, 6 = Strongly Agree) developed by Kwon *et al.* (2013). The result is a score of 8 to 48, with a high ranking meaning a higher addiction to smartphones. The internal consistency reliability of the scale in this study was 0.752, which is satisfactory as far as the psychological construct is concerned. A value of more than 0.70 signifies satisfactory reliability since the items are always used to measure smartphone addiction among university students.

3.4.4 Cyberloafing Scale. Cyberloafing was measured using the existing tools by Akbulut *et al.* (2016) and Santepeci and Sert (2021). The relevant items of the two scales were modified and pooled into a composite measure that could be used towards the objectives of the present

study. The last instrument was a 16-item questionnaire that evaluated a number of issues related to cyberloafing behavior. All were answered on a five-point Likert scale with 1 (Never) to 5 (Always) being the answers. The cyberloafing behavior measure was evaluated by a 16-item scale It is rated on a 5-point Likert scale (1 = Never, 5 = Always)). The higher scores are reflective of the higher engagement in non-academic online activities over a period of study or in a classroom.

3.5 Data analysis techniques

Data collected were analyzed using IBMS SPSS Statistics Version 22. The missing values, outliers and discrepancies were first filtered out of the dataset. To summarize the demographic features of the subjects and main variables, the central tendencies of the study, descriptive statistics (mean, SD, frequency and percentage) were assessed. Cronbach alpha coefficients were used to conduct the reliability analysis to determine the internal consistency of the FoMO Scale, Smartphone Addiction Scale and Cyberloafing Scale.

Before carrying out inferential analyses, statistical assumptions were tested. Skewness and kurtosis values were used to check the normality, and all the values were within the acceptable range of ± 1.0 . The multicollinearity was evaluated based on Tolerance and Variance Inflation Factor (VIF) values, and the values of Tolerance were more than 0.88 and VIF values were below 1.20, and at these values, the multicollinearity was not taken into consideration.

The correlation analysis used by Pearson was used to investigate the relationship between FoMO, smartphone addiction and cyberloafing. With the assistance of multiple regression, FoMO and smartphone addiction predictive influence on cyberloafing was determined.

4. Results

4.1 Reliability analysis

In the current research, the scale showed a Cronbach’s alpha = of 0.743, which implies sufficient internal reliability to use in research. According to the guidelines of reliability, coefficient values in the range of 0.70–80 are said to be acceptable when carried out in early-stage research or in exploratory research. This scale is a reliable way of measuring cyberloafing behaviors.

Table 2 indicates that all the scales had good internal consistency with Cronbach’s alpha values greater than 0.70. This means that the instruments of this study were appropriate and can be extended to other statistical tests.

4.2 Descriptive statistics

Table 3 includes the descriptive statistics of the key variables of the study. These values provide an overview of participants’ average responses and the variability within FoMO, smartphone addiction and the level of cyberloafing. The results indicate that students report moderate levels of FoMO and smartphone addiction, while cyberloafing shows a relatively

Table 2. Internal consistency reliability of scales

Scale	No. of items	Cronbach’s α
FoMO scale	8	0.728
Smartphone addiction scale	8	0.752
Cyberloafing scale	16	0.743

Note(s): Table 2 indicates that all the scales had good internal consistency with Cronbach’s alpha values greater than 0.70. This means that the instruments of this study were appropriate and can be extended to other statistical tests

Source(s): Authors’ own work

Table 3. Descriptive statistics of study variables ($N = 306$)

Variable	Mean (M)	SD	N
FoMO	21.20	5.98	306
Smartphone addiction	21.24	7.21	306
Cyberloafing	40.49	9.00	306

Note(s): Table 3 includes the descriptive statistics of the key variables of the study. These values provide an overview of participants' average responses and the variability within FoMO, smartphone addiction and the level of cyberloafing. The results indicate that students report moderate levels of FoMO and smartphone addiction, while cyberloafing shows a relatively higher mean value, suggesting that non-academic online activities are commonly practised during study or class time. The standard deviation values reflect sufficient variability within the sample, confirming that the measures capture meaningful individual differences

Source(s): Authors' own work

higher mean value, suggesting that non-academic online activities are commonly practiced during study or class time. The standard deviation values reflect sufficient variability within the sample, confirming that the measures capture meaningful individual differences.

4.3 Correlation analysis

The Pearson correlation coefficient was used to test the relationship between the major variables of the study. The values of the correlation are given in Table 4.

The results of the correlation indicate that cyberloafing has a positive and significant relationship with both FoMO ($r = 0.286, p < 0.01$) and smartphone addiction ($r = 0.487, p < 0.01$). This indicates that students who experience greater FoMO and tend to be more addicted to their smartphones are more likely to be involved in cyberloafing. Additionally, FoMO and smartphone addiction are moving averagely correlated ($r = 0.334, p < 0.01$), which indicates that students who have higher FOMO experience this. Those who miss out are more likely to have greater smartphone addiction.

4.4 Regression analysis

Before the regression analysis, both the normality and multicollinearity assumptions were tested. Skewness and kurtosis values of FoMO, smartphone addiction and cyberloafing were all within the acceptable range of ± 1.0 , which is the generally accepted standard of normally distributed data. Moreover, Tolerance and VIF values were used to determine multicollinearity. Tolerance values of both FoMO and smartphone addiction were both

Table 4. Pearson correlation matrix among study variables ($N = 306$)

Variable	1	2	3
1. Cyberloafing	–	0.286**	0.487**
2. FoMO	0.286**	–	0.334**
3. Smartphone addiction	0.487**	0.334**	–

Note(s): $p < 0.01$ (2-tailed)

The results of the correlation indicate that cyberloafing has a positive and significant relationship with both FoMO ($r = 0.286, p < 0.01$) and smartphone addiction ($r = 0.487, p < 0.01$). This indicates that students who experience greater FoMO and tend to be more addicted to their smartphones are more likely to be involved in cyberloafing. Additionally, FoMO and smartphone addiction are moving averagely correlated ($r = 0.334, p < 0.01$), which indicates that students who have higher fear of missing out experience this. Those who miss out are more likely to have greater smartphone addiction

Source(s): Authors' own work

above 0.88 (Tolerance = 0.10), a requirement and the VIF value was less than 1.20 (VIF <10 was necessary), which shows that the data did not have multicollinearity and was appropriate to be analyzed by regression.

To establish the predictive power of FoMO and smartphone addiction on cyberloafing, multiple regression analysis was performed. The analysis will be used to determine how much of the independent variables is contributing to changes in cyberloafing behavior. The results of the regression model are presented in Table 5.

The model explains approximately 25.4% of the variance in cyberloafing ($R^2 = 0.254$), which indicates that both psychological (FoMO) and behavioral (smartphone addiction) variables significantly contribute to cyberloafing.

4.5 Additional group comparisons

4.5.1 Comparison of FoMO, smartphone addiction and cyberloafing by academic year. Table 6 indicates that no statistically significant differences were found between first-year students and students in higher academic years in terms of FoMO ($p = 0.395$), smartphone addiction ($p = 0.541$) and cyberloafing ($p = 0.274$). These findings suggest that the levels of the three study variables remain relatively consistent across academic years.

Table 5. Multiple regression analysis predicting cyberloafing (N = 306)

Predictor	B	SE	β	t	p
Constant	20.321	2.571	–	7.90	0.000
Smartphone addiction	0.550	0.066	0.441	8.371	0.000
FoMO	0.209	0.079	0.139	2.640	0.009

Note(s): $R = 0.504$

$R^2 = 0.254$

Adjusted $R^2 = 0.249$

$F(2, 303) = 51.64, p < 0.001$

The regression results indicate that the combined model significantly predicts cyberloafing ($F = 51.64, p < 0.001$). Smartphone addiction proved to be the best predictor ($0.441, p < 0.001$), indicating that students who have a greater degree of smartphone addiction are much more prone to cyberloafing behaviors. It also found that FoMO was a significant predictor of cyberloafing ($\beta = 0.139, p < 0.01$), but with a relatively smaller effect. The model explains approximately 25.4% of the variance in cyberloafing ($R^2 = 0.254$), which indicates that both psychological (FoMO) and behavioral (smartphone addiction) variables significantly contribute to cyberloafing

Source(s): Authors' own work

Table 6. Comparison of FoMO, smartphone addiction and cyberloafing by academic year

Variable	First year mean (SD)	Other years mean (SD)	t	p
FoMO	21.47 (5.81)	20.88 (6.20)	0.852	0.395
Smartphone addiction	21.47 (7.49)	20.96 (6.88)	0.611	0.541
Cyberloafing	39.99 (9.69)	41.11 (8.10)	–1.096	0.274

Note(s): $p > 0.05$

Table 6 indicates that no statistically significant differences were found between first-year students and students in higher academic years in terms of FoMO ($p = 0.395$), smartphone addiction ($p = 0.541$) and cyberloafing ($p = 0.274$). These findings suggest that the levels of the three study variables remain relatively consistent across academic years

Source(s): Authors' own work

4.5.2 Comparison of FoMO, smartphone addiction and cyberloafing by residential status. Table 7 indicates that no statistically significant differences were found between students living at home and those living away from home in terms of FoMO ($p = 0.366$), smartphone addiction ($p = 0.972$) and cyberloafing ($p = 0.670$). These results indicate that residential status does not appear to substantially influence the levels of the three study variables in the present sample.

5. Discussion

The results of this research offer valuable information on the factors that determine cyberloafing behavior among higher education students. The findings suggest that FoMO and smartphone addiction are important factors in students participating in cyberloafing. These results underscore the importance of psychological and behavioral factors in determining the digital behavior of students in academic institutions.

The strong positive correlation between FoMO and cyberloafing indicates that students with greater social anxiety and FoMO tend to spend more time on non-academic online activities when they are studying (Al-Furaih and Al-Awidi, 2021; Jin *et al.*, 2023). This tendency may be explained by the necessity to remain connected with social networks and digital platforms all the time, and they interfere with the concentration and academic attention of students. High FoMO students are more likely to look at notifications, social media and online updates frequently, even when attending lectures and are more likely to follow cyberloafing behavior (Przybylski *et al.*, 2013; Oberst, Wegmann, Stodt, Brand, & Chamarro, 2017).

In this study, smartphone addiction came out as the most influential predictor of cyberloafing, and it implies that overreliance on smartphones is a key factor in academic distraction (Ravizza *et al.*, 2014; Mendoza *et al.*, 2018). Addictive smartphone users tend to show poorer levels of control and are more impulsive, making it hard to resist the temptation to do non-academic tasks (Kwon *et al.*, 2013; Lepp *et al.*, 2015). Consequently, they will be more prone to engage in cyberloafing, which negatively impacts their academic involvement and academic performance (Gökçearsan, Mumcu, Haşlamam, & Çevik, 2016).

The results can be compared to those of earlier studies that have found FoMO to be one of the driving factors of unhealthy digital consumption and addiction to smartphones (Elhai *et al.*, 2016; Kuss & Griffiths, 2017). On the same note, previous research has established that there is a high correlation between smartphone addiction and cyberloafing, implying that addiction to digital devices greatly influences off-task behavior among students in the learning context (Gökçearsan *et al.*, 2016, 2018). The current research advances this knowledge by demonstrating that FoMO and smartphone addiction have a negative effect on cyberloafing behavior on their own.

Table 7. Comparison of FoMO, smartphone addiction and cyberloafing by residential status

Variable	Living at home mean (SD)	Living away from home mean (SD)	t	p
FoMO	20.99 (6.20)	21.64 (5.56)	-0.905	0.366
Smartphone addiction	21.23 (7.69)	21.26 (6.19)	-0.035	0.972
Cyberloafing	40.34 (9.10)	40.81 (8.87)	-0.427	0.670

Note(s): $p > 0.05$

Table 7 indicates that no statistically significant differences were found between students living at home and those living away from home in terms of FoMO ($p = 0.366$), smartphone addiction ($p = 0.972$) and cyberloafing ($p = 0.670$). These results indicate that residential status does not appear to substantially influence the levels of the three study variables in the present sample

Source(s): Authors' own work

Notably, the results indicate that FoMO and smartphone addiction are independent predictors of cyberloafing, as opposed to being a mediation process. This means that the influence of emotional aspects and the dependence of behavior are independent and affect each other directly, leading to students participating in non-academic online activities. This knowledge offers a more critical view of the digital distraction among students.

The results of this research have significant implications for institutions of higher learning. Universities are supposed to establish mechanisms that can control the use of smartphones in the classroom and instill discipline amongst the students in the digital world. Students can be made aware of how to manage FoMO and enhance self-control to decrease high smartphone use. Also, teachers can embrace interactive and engaging modes of teaching to reduce instances of digital disturbances and improve the attention of students during lectures.

The current findings may be particularly relevant in online and distance education contexts, where students more heavily rely on digital technologies for their learning, as well as experience higher autonomy with comparatively lower levels of direct supervision. Thus, in FOMO-prone and smartphone-overusing contexts, for example are more susceptible to cyberloafing or the like of digital distraction. As a result of this study, the relations identified here are relevant not only to traditional higher education contexts but also to technology-enhanced learning contexts.

All in all, this research has identified the synergistic effect of psychological and behavioral factors on cyberloafing behavior among university students. Combining FoMO-related anxiety and smartphone addiction is important to enhance academic engagement and minimize the distraction of digital devices ([Metin-Orta & Demirtepe-Saygılı, 2023](#)).

6. Limitations and future research

Despite the contributions made in this study, there are several limitations that can be linked to it. One, the cross-sectional design can restrict causal explanations of the relationships between cyberloafing, FoMO and smartphone addiction. Second, the self-report measures applied may cause the problem of common method bias, which is frequent in behavioral studies ([Podsakoff, MacKenzie, Lee, & Podsakoff, 2003](#)). To address these weaknesses, a longitudinal research design, an experimental study or multi-source research can be employed in future research.

Moreover, the study focused on students in a specific national context when it comes to higher education, which can be considered a weakness of generalizations. Future studies may examine these relationships among students enrolled exclusively in online and distance education programs to determine whether the observed patterns differ across learning environments. Future research can be conducted on other related models in a different cultural and educational context.

7. Conclusion

This paper has discussed how FoMO and addiction to smartphones can impact the behavior of cyberloafing among university students. Specifically, the study aimed to coherently explain the role of FoMO in students' online engagement and compulsive smartphone use, which lead to tendencies toward cyberloafing in the context of contemporary higher education. The results show that FoMO and smartphone addiction are both important predictors of cyberloafing, although smartphone addiction is the more significant predictor. These findings indicate that non-academic online activities among students are shaped by the combination of psychological (FoMO) and behavioral (excessive use of the smartphone) factors.

The findings also support the applicability of the Interaction of Person-Affect-Cognition-Execution (I-PACE) framework to understanding students' technology-related behaviors. In this context, FoMO is a psychological mechanism on the affective-cognitive level, which involves students' concerns about missing out on social connections, while smartphone addiction is a technology-use tendency that is maladaptive. Cyberloafing, in turn, is a

behavioral outcome that is expressed in the form of engaging in non-academic online activities while learning. Incorporating these psychological and behavioral factors, the I-PACE model offers a unified framework for understanding the role of technology-related motivations and usage patterns in cyberloafing among university students in the context of higher education in India.

The study also fills a significant gap in the literature by exploring the relationship between FoMO, smartphone addiction and cyberloafing in a single empirical context in Higher Education in India. The results build on the existing literature on why psychological factors and technology-related factors collectively play a role in students' digital distraction practices.

The results are significant for higher education institutions in India as well. Digital well-being programs, responsible smartphone-use policies and awareness programs about conscious technology consumption for students could be introduced in universities. These interventions include ways to improve academic engagement, enrich meaningful academic interaction and mitigate technologies that disrupt academic learning in more and more technology-mediated learning environments. This study combines psychological and behavioral approaches, thereby offering a comprehensive understanding of cyberloafing and evidence-based suggestions for educators, administrators and policymakers to improve learning experiences. These implications are especially important in an online and distance learning context where students use digital technologies extensively or for the majority of their time and where there is less external supervision and more online activity, potentially increasing their risk for cyberloafing.

Declaration

The authors declare that this manuscript, entitled “*Understanding Cyberloafing in Higher Education: The Role of Fear of Missing Out and Smartphone Addiction*”, is original, has not been published previously, and is not under consideration for publication elsewhere.

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