

# The Moderating Role of Academic Self-Efficacy in the Relationship Between Mobile-Based Cyberloafing and Academic Commitment Among Secondary Students in Babylon, Iraq

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### ABSTRACT

Enhancing students' capacity and ability to make optimal use of available opportunities and resources is of critical importance. This study aimed to investigate the moderating role of academic self-efficacy in the relationship between mobile-based cyberloafing and academic commitment among lower secondary school students in the city of Babylon, Iraq. The research employed a correlational method, and the statistical population consisted of lower secondary school students in Babylon, Iraq, during spring 2024. A total of 368 students were selected through convenience sampling and responded to the Academic Commitment Questionnaire (Huynh, Vogel, & Rabi, 2015), the Mobile-Based Cyberloafing Questionnaire (Askew, 2012), and the Academic Self-Efficacy Questionnaire (McIlroy & Bunting, 2002). Data were analyzed using Pearson correlation coefficients and hierarchical regression analysis via SPSS version 26. The results indicated that mobile-based cyberloafing had a significant relationship with both academic commitment and academic self-efficacy ( $p < .05$ ). Hierarchical regression analysis further revealed that academic self-efficacy served as a moderating variable in the relationship between mobile-based cyberloafing and academic commitment. Specifically, when academic self-efficacy was high, there was no significant relationship between mobile-based cyberloafing and academic commitment. Based on the findings of this study, it is essential to consider the role of academic self-efficacy in mitigating the negative effects of mobile-based cyberloafing on academic commitment, with the aim of strengthening student capabilities.

**Keywords:** mobile-based cyberloafing, academic self-efficacy, academic commitment, students.

## 1. Introduction

The rapid expansion of mobile digital technologies in educational environments has created both opportunities and challenges for student engagement and academic performance. One such challenge is the increasing prevalence of cyberloafing—non-academic internet use during educational time, especially via mobile devices. This behavior has become particularly salient among adolescents, who often lack the regulatory capacity to manage digital temptations during school activities. As mobile phones become ubiquitous tools in students' daily lives, concerns over their impact on academic behaviors, including commitment and performance, continue to mount (Askew, 2012; Chen et al., 2021; Talan & Kalinkara, 2022). In light of these concerns, this study investigates the moderating role of academic self-efficacy in the relationship between mobile-based cyberloafing and academic commitment among lower secondary students in Babylon, Iraq.

Cyberloafing is not merely a behavioral distraction but reflects broader cognitive and affective processes, including stress, fatigue, and poor self-regulation (Chen et al., 2021; Nweke et al., 2024; Simatupang & Margaretha, 2023). Mobile phones have made off-task online behavior easily accessible, contributing to academic disengagement and poor performance (Busch & McCarthy, 2021; Peng, 2022). In contexts like Iraq, where educational infrastructures are still adjusting to technological integration, adolescents are particularly vulnerable to the negative effects of digital distractions (Aljuboori et al., 2020; Sadri et al., 2021). Yet, despite the widespread nature of cyberloafing, the presence of individual-level moderators, such as academic self-efficacy, may help buffer its detrimental effects.

Academic commitment, referring to students' psychological and emotional dedication to academic goals, has been recognized as a vital construct in educational success (Human-Vogel & Rabe, 2015; Putra et al., 2022). However, this commitment can be compromised by maladaptive behaviors such as excessive mobile use and online distraction during academic activities (Chen et al., 2021; Heydari Gardagani, 2022; Talan & Kalinkara, 2022). Studies have consistently shown that students who engage in higher levels of mobile-based cyberloafing tend to report lower academic involvement, reduced persistence, and a weakened academic identity (Simatupang & Margaretha, 2023; Zhong et al., 2022).

Notably, the extent to which cyberloafing undermines academic functioning may be influenced by academic self-

efficacy—a student's belief in their ability to succeed in academic tasks. High self-efficacy is associated with better focus, persistence, and resilience in the face of distractions (Li et al., 2020; Mahdizadeh et al., 2018; McIlroy & Bunting, 2002). Students with strong academic self-efficacy tend to employ more effective time management and learning strategies, making them more resistant to the adverse effects of off-task behaviors such as cyberloafing (Ahmad Ali, 2024; Aziz et al., 2024; Parmaksız, 2023).

In the Iraqi educational context, particularly among adolescents, empirical research on these dynamics remains sparse. While studies have explored social media use and digital behavior among university students in Iraq (Ahmad Aboud, 2023; Aljuboori et al., 2020; Shavardi et al., 2020), less is known about how mobile-based cyberloafing influences academic behavior in secondary education, or how psychological factors like self-efficacy may moderate this relationship. This lack of localized research is especially concerning given that Iraqi adolescents are increasingly immersed in digital environments without corresponding support in digital self-regulation or structured guidance from educational institutions (Sadri et al., 2021; Xia et al., 2023).

Global research has highlighted that cyberloafing is strongly associated with decreased academic motivation, academic procrastination, and emotional exhaustion (Chen et al., 2021; Nweke et al., 2024; Peng, 2022). For instance, (Chen et al., 2021) found that fatigue and maladaptive coping strategies mediate the relationship between perceived stress and cyberloafing. Similarly, (Nweke et al., 2024) demonstrated that academic stress predicts cyberloafing through the mediating effects of fatigue and reduced self-control. These findings illustrate that cyberloafing is not merely a technological issue, but one deeply rooted in students' psychological functioning and self-regulatory capacities.

Likewise, academic self-efficacy has emerged as a critical variable in protecting students from academic disengagement and counterproductive behaviors. For instance, (Li et al., 2020) and (Parmaksız, 2023) both demonstrated that academic self-efficacy reduces the likelihood of procrastination and offsets the impact of smartphone addiction. In the same vein, (Peng, 2022) identified that self-efficacy moderated the effects of moral disengagement on cyberloafing among university students. These insights underscore the importance of strengthening students' belief in their academic capabilities as a countermeasure to digital distractions.

Furthermore, academic commitment has itself been conceptualized as a mediating and outcome variable in several academic models. It links personal dispositions—such as self-efficacy, resilience, and motivation—with educational outcomes like performance and persistence (Nigussie Worku & Urgessa Gita, 2024; Putra et al., 2022). In a recent study, (Nigussie Worku & Urgessa Gita, 2024) found that academic commitment significantly mediated the relationship between resilience and academic performance, emphasizing its central role in academic success. In a similar effort, (Rezaei-Gazki et al., 2019) standardized the Persian version of the Academic Commitment Scale and validated its multidimensional structure, making it suitable for cross-cultural applications in diverse educational settings.

Yet, despite the growing body of evidence supporting the relationships among these variables, few studies have directly examined the interactive role of academic self-efficacy in moderating the effect of cyberloafing on academic commitment—particularly in the adolescent population of developing nations. Research in Middle Eastern contexts, including Iraq, often focuses on broader academic stress or digital media usage rather than the specific behavioral patterns associated with cyberloafing via mobile phones (Ahmad Aboud, 2023; Aljuboori et al., 2020; Sadri et al., 2021).

This study also builds on theoretical frameworks such as Bandura's social cognitive theory, which posits that self-efficacy influences not only behavior but also cognitive processes, motivation, and emotional reactions. Students with high self-efficacy are more likely to interpret potential distractions, such as mobile phones, as manageable challenges rather than uncontrollable obstacles. They are also more likely to employ adaptive strategies to maintain their academic commitment in distracting environments (Ahmad Ali, 2024; Aziz et al., 2024; McIlroy & Bunting, 2002).

Based on this theoretical and empirical foundation, the present study seeks to address a notable gap in the literature by exploring how academic self-efficacy moderates the relationship between mobile-based cyberloafing and academic commitment in a sample of lower secondary students in Babylon, Iraq.

## 2. Methods and Materials

### 2.1. Study Design and Participants

This research employed a correlational design using hierarchical regression analysis. The statistical population of

the study included all lower secondary school students in the city of Babylon, Iraq, totaling 8,000 individuals in spring 2024. Based on the Krejcie and Morgan table (1970), and considering the potential invalidity of some questionnaires, a sample of 400 students was selected using convenience sampling. After the return of the questionnaires, 32 were deemed invalid, reducing the final research sample to 368 participants. Inclusion criteria included informed consent to participate in the study and enrollment in lower secondary education in Babylon, Iraq. The study utilized the following instruments:

### 2.2. Measures

To assess academic commitment, the 30-item questionnaire developed and validated by Huyhn, Vogel, and Rabi (2015) was used. This instrument covers five domains: level of commitment (5 items), satisfaction (8 items), investment (5 items), quality of alternatives (3 items), and meaning (9 items). Responses are scored on a six-point Likert scale ranging from 1 = strongly disagree to 6 = strongly agree. The total academic commitment score ranges from 30 to 180, with higher scores indicating greater commitment. Huyhn et al. (2015) confirmed the construct validity through exploratory factor analysis with promax rotation and confirmatory factor analysis, and they reported significant correlations with the Self-Differentiation Questionnaire as evidence of convergent validity. Cronbach's alpha coefficients for the subscales were reported as 0.84 (commitment level), 0.90 (satisfaction), 0.90 (investment), 0.68 (quality of alternatives), and 0.91 (meaning). Rezaei-Gazki et al. (2019) validated a Persian version of the questionnaire among Iranian university students. The content validity index (CVI) and content validity ratio (CVR) were reported as 0.89 and 0.86, respectively. The confirmatory factor analysis supported the structural validity, and Cronbach's alpha values for total academic commitment and subscales ranged from 0.70 to 0.90 (Rezaei-Gazki et al., 2019). For the current study, the questionnaire was translated into Arabic, validated by five university professors, and its reliability in Iraq was confirmed with a Cronbach's alpha of 0.94.

To assess mobile-based cyberloafing, the 7-item questionnaire developed by Askew (2012) was used. The scale uses a five-point Likert response format ranging from 1 = never to 5 = always. Golparvar (2016) translated and adapted the questionnaire for the first time in Iran (Heydari Gardagoni, 2022). Askew (2012) provided evidence of

convergent and concurrent validity through significant positive correlations with future cyberloafing tendencies and attitudes toward cyberloafing. The Cronbach's alpha for this instrument ranged from 0.75 to 0.88 (Askew, 2012). In the study by Heydari Gardagani (2022), convergent validity was supported by significant correlations between cyberloafing scores and anxiety/stress levels, and reliability was confirmed with a Cronbach's alpha of 0.86 (Heydari Gardagani, 2022). For the present study, the questionnaire was translated into Arabic, validated by five university professors, and its reliability in Iraq was confirmed with a Cronbach's alpha of 0.77.

To measure academic self-efficacy, the 10-item scale developed by McIlroy and Bunting (2002) was utilized. This tool focuses on students' academic behaviors, planning, and organization. Responses are recorded on a 7-point Likert scale ranging from 1 = strongly agree to 7 = strongly disagree. Total scores range from 10 to 70, with higher scores indicating greater academic self-efficacy. McIlroy and Bunting (2002) reported significant relationships with personality traits and academic achievement as evidence of convergent and discriminant validity. The instrument's reliability was reported with a Cronbach's alpha of 0.81. The questionnaire has been used in multiple studies. In the study

by Mahdizadeh et al. (2018) in Iran, significant positive correlations with academic procrastination and self-handicapping were reported as evidence of discriminant validity, and Cronbach's alpha was reported as 0.78 (Mahdizadeh et al., 2018). For the current study, the questionnaire was translated into Arabic, validated by five university professors, and its construct validity was supported by exploratory factor analysis. Reliability in Iraq was confirmed with a Cronbach's alpha of 0.91.

### 2.3. Data Analysis

The questionnaires were completed through self-reporting. The data obtained were analyzed using Pearson correlation coefficients, means, and standard deviations. After verifying statistical assumptions—including normality using the Shapiro–Wilk test and linearity through scatter plots and other regression assumptions—hierarchical regression analysis was conducted using SPSS version 26.

## 3. Findings and Results

Table 1 presents the demographic characteristics (grade level, birth order, age, and gender) of the research sample.

**Table 1**

*Demographic Characteristics of the Research Sample (n = 368)*

Variable	Frequency	Percentage	Variable	Frequency	Percentage
Grade Level			Birth Order		
First Year	111	30.2%	Low	124	33.7%
Second Year	133	36.1%	Medium	179	48.6%
Third Year	124	33.7%	High	65	17.7%
Age			Gender		
13–14 years	185	50.3%	Female	190	51.6%
15–16 years	183	49.7%	Male	178	48.4%

Table 2 shows the means, standard deviations, and correlations among the study variables.

**Table 2**

*Mean, Standard Deviation, and Correlations Among the Study Variables*

Variables	Mean	SD	1	2	3
1. Cyberloafing via Mobile Phone	30.22	3.53	—		
2. Academic Commitment	130.23	13.55	-.40	—	
3. Academic Self-Efficacy	62.45	8.37	-.32	.55	—

As shown in Table 2, there is a significant negative correlation between cyberloafing via mobile phone and both academic commitment and academic self-efficacy ( $p < .01$ ).

Moreover, there is a significant positive correlation between academic commitment and academic self-efficacy ( $p < .01$ ). A significant negative relationship was also observed

between social isolation and academic commitment ( $p < .01$  or  $p < .05$ ). The moderating role of academic self-efficacy in the relationship between mobile-based cyberloafing and

academic commitment was examined using hierarchical regression analysis. The results are presented in Table 3.

**Table 3**

*Results of Hierarchical Regression Analysis Predicting Academic Commitment from Mobile-Based Cyberloafing and Academic Self-Efficacy (Criterion Variable: Academic Commitment)*

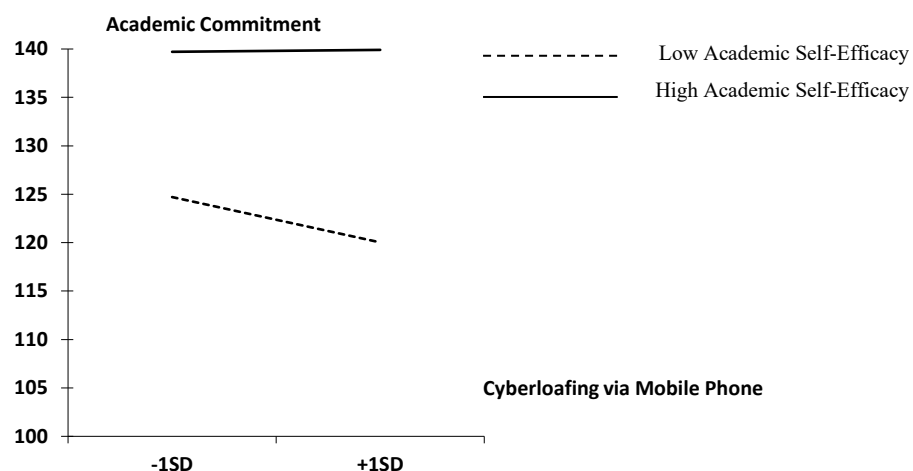
Row	Predictor Variables	Model 1	Model 2	Model 3
1	Cyberloafing via Mobile Phone	-.40	-.25	-.22
2	Academic Self-Efficacy	—	.48	.45
3	Cyberloafing $\times$ Academic Self-Efficacy	—	—	-.16
4	R <sup>2</sup> or $\Delta R^2$	.16	.20	.024
5	F or $\Delta F$	69.56	117.11	14.31

As shown in Table 3, in the first step, mobile-based cyberloafing was a significant predictor of academic commitment and accounted for 16% of the variance. In the second step, academic self-efficacy added an additional 20% of explained variance in academic commitment. In the third

step, the interaction term (Cyberloafing  $\times$  Academic Self-Efficacy) significantly contributed an additional 2.4% of variance in academic commitment. The results of the simple slope analysis are illustrated in Figure 1.

**Figure 1**

*Graph of the Relationship Between Mobile-Based Cyberloafing and Academic Commitment at Low and High Levels of Academic Self-Efficacy*



As shown in Figure 1, at low levels of academic self-efficacy, there is a significant negative relationship between mobile-based cyberloafing and academic commitment. However, at high levels of academic self-efficacy, this relationship is not statistically significant. Based on the findings presented in Table 3, the research hypothesis—that academic self-efficacy moderates the relationship between mobile-based cyberloafing and academic commitment among lower secondary school students in Babylon, Iraq—is confirmed.

#### 4. Discussion and Conclusion

The aim of this study was to examine the moderating role of academic self-efficacy in the relationship between cyberloafing via mobile phones and academic commitment among lower secondary school students in Babylon, Iraq. The findings supported the hypothesis, revealing that cyberloafing negatively predicted academic commitment, and academic self-efficacy significantly moderated this



relationship. Specifically, while a strong negative relationship was observed between cyberloafing and academic commitment in students with low academic self-efficacy, this relationship was non-significant in students with high academic self-efficacy. This pattern demonstrates the buffering effect of academic self-efficacy in mitigating the detrimental impact of cyberloafing on academic engagement.

These findings align with a growing body of research suggesting that mobile-based cyberloafing undermines students' academic involvement and commitment. Previous studies have identified cyberloafing as a barrier to effective academic functioning, disrupting focus and reducing persistence in academic tasks (Askew, 2012; Chen et al., 2021). In the context of Iraqi adolescents, the increasing accessibility of mobile phones combined with limited regulatory frameworks heightens the risks of academic distraction and disengagement (Aljuboori et al., 2020; Sadri et al., 2021). The present study confirms that cyberloafing via mobile phones is a significant predictor of reduced academic commitment, consistent with findings from other educational contexts that have associated cyberloafing with procrastination, lower academic achievement, and diminished emotional investment in academic goals (Peng, 2022; Simatupang & Margaretha, 2023).

The significant moderating role of academic self-efficacy observed in this study emphasizes the psychological mechanisms that can buffer the negative effects of cyberloafing. Students with high academic self-efficacy—those who believe in their capacity to manage academic tasks—appear more resilient to the distracting effects of mobile use. This is consistent with the theoretical framework of Bandura's social cognitive theory, which highlights the role of self-efficacy in shaping behavior, motivation, and emotional responses in the face of challenges (McIlroy & Bunting, 2002). Prior studies have found that students with high self-efficacy exhibit better time management, greater task persistence, and more effective self-regulation strategies, all of which likely contribute to their ability to resist or minimize the negative impact of cyberloafing (Li et al., 2020; Mahdizadeh et al., 2018; Parmaksız, 2023).

This moderating effect is further supported by studies showing that academic self-efficacy can reduce vulnerability to academic procrastination, technological distractions, and moral disengagement in academic contexts (Ahmad Ali, 2024; Peng, 2022). For instance, (Li et al., 2020) demonstrated that academic self-efficacy mediates and buffers the relationship between smartphone addiction and

procrastination, indicating its dual role as both a predictor and a moderator. Similarly, (Parmaksız, 2023) found that academic self-efficacy moderated the relationship between phubbing and academic procrastination, underscoring its potential in neutralizing the effects of digitally-driven behavioral issues.

The current findings also contribute to the broader literature on academic commitment by demonstrating its susceptibility to technological distractions in adolescent populations. Academic commitment, characterized by sustained engagement, satisfaction, and emotional attachment to educational goals, is critical to long-term academic success (Human-Vogel & Rabe, 2015; Putra et al., 2022). Yet, the results here illustrate how such commitment can be undermined by frequent and purposeless engagement with mobile phones. These results echo the findings of (Chen et al., 2021) and (Talan & Kalinkara, 2022), who identified cyberloafing as a significant barrier to academic engagement.

Moreover, this study adds important regional evidence to the growing field of cyberloafing research. While most studies have been conducted in Western and Asian educational contexts, there remains a shortage of research focused on Middle Eastern adolescents. The current study's emphasis on Iraqi students bridges this gap and underscores the relevance of psychological constructs such as academic self-efficacy in non-Western cultural contexts (Ahmad Aboud, 2023; Shavardi et al., 2020). The significant findings related to academic self-efficacy are also supported by studies like (Aziz et al., 2024) and (Ahmad Ali, 2024), which emphasize its impact on motivation, resilience, and academic completion among students in similar cultural and educational settings.

Furthermore, the positive relationship between academic self-efficacy and academic commitment observed in this study is consistent with the findings of (Nigusie Worku & Urgessa Gita, 2024), who reported that academic commitment mediates the relationship between academic resilience and academic performance. This suggests that enhancing academic self-efficacy may indirectly foster greater academic commitment, which in turn leads to better academic outcomes. The validated structure and predictive power of the Academic Commitment Scale, as demonstrated in (Rezaei-Gazki et al., 2019), reinforces the reliability of the current study's results.

The moderation model tested here contributes to our understanding of the complex interplay between behavioral distractions, psychological resources, and educational

outcomes. While cyberloafing continues to be an evolving behavioral trend among adolescents, this study shows that individual traits such as self-efficacy play a crucial role in determining whether and to what extent this behavior will impact academic functioning. Additionally, the findings highlight the need for preventive and educational strategies that prioritize psychological skill development alongside digital literacy.

Despite its contributions, the study is not without limitations. First, the cross-sectional design limits the ability to establish causal relationships between variables. Although statistical associations suggest directional influence, longitudinal research is required to confirm these pathways over time. Second, the use of self-report instruments may have introduced social desirability bias, particularly in measuring sensitive behaviors like cyberloafing. While anonymity was assured, students may still have underreported their engagement in non-academic mobile use. Third, the study was conducted in a single city in Iraq, which may limit the generalizability of the findings to other cultural or educational settings. Furthermore, important contextual variables such as parental monitoring, teacher involvement, and school digital policies were not included in the analysis.

Future studies should adopt longitudinal designs to better understand the causal relationships and directionality between cyberloafing, academic self-efficacy, and commitment. Including diverse geographic and cultural populations would enhance generalizability and allow for cross-cultural comparisons. Future research should also explore additional moderating or mediating variables such as digital literacy, parental engagement, peer influence, and personality traits to develop a more comprehensive model. Experimental or intervention-based studies could examine whether enhancing self-efficacy through structured training programs can reduce cyberloafing behaviors. It would also be beneficial to incorporate qualitative data, such as student interviews or focus groups, to gain deeper insight into their motivations and experiences with mobile phone use in academic contexts.

Educational policymakers and school administrators should consider integrating digital behavior management programs within the curriculum to educate students about the consequences of cyberloafing. Schools should also prioritize interventions that foster academic self-efficacy, such as mentoring programs, goal-setting workshops, and feedback-focused teaching strategies. Teachers can play a pivotal role by promoting classroom environments that encourage

engagement and by modeling effective self-regulation techniques. Moreover, school counselors should be trained to identify students with low self-efficacy and provide targeted support to enhance their confidence in academic tasks. Finally, implementing clear digital use policies and offering structured guidance on responsible mobile phone use may help reduce off-task behavior and foster a more focused learning environment.

### Authors' Contributions

Authors contributed equally to this article.

### Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

### Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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### Declaration of Interest

The authors report no conflict of interest.

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### Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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