

The Impact of Smartphone Use on University Students' Education

Reyhan Yıldırım

*PhD Student Girne American University. Faculty of Communication. Communication and Media Management.
Kyrenia TRNC reyhan.yildirim@ankaramedipol.edu.tr
ORCID ID: 0000-0001-8485-4975*

Mükerrem Yılmaz

*Assist. Prof. Dr. Girne American University. Faculty of Communication. New Media Management.
Kyrenia TRNC E-Mail: mukerremyilmaz@gau.edu.tr
ORCID ID: 0000-0002-7755-0823*

ABSTRACT

This study aims to examine in detail the impact of smartphone use on university students' academic processes. As the role of technology in education continues to grow, smartphones have become an integral part of students' daily lives. Therefore, understanding the effects of these devices on academic performance, time management, and study habits is crucial. The study analyzes the influence of smartphone usage duration, purpose of use, and addiction level on students' academic success, time management skills, and academic procrastination behaviors. The research was conducted using a descriptive survey model, with a study group consisting of 637 university students enrolled at Ankara Medipol University. Participants provided data through an online survey, and the collected data were analyzed using SPSS 27 software. The statistical methods employed in this study include correlation analysis, descriptive statistics, normality tests, reliability analysis (Cronbach's Alpha), Chi-Square Tests, Mann-Whitney U Test, and Kruskal-Wallis H Test. These methods allowed for a multidimensional examination of the relationship between smartphone use and academic performance.

The study results indicate that as smartphone usage time increases, academic performance shows a significant decline. Particularly, excessive use of social media and entertainment applications was found to reduce study time and make concentration more difficult. However, students with higher academic achievement were more likely to use their smartphones for accessing course materials, sharing notes, and conducting academic research. In contrast, students with lower academic performance were found to spend more time on social media, online games, and other distracting content. Additionally, students with higher levels of smartphone addiction exhibited more academic procrastination behaviors. The study also revealed that smartphone usage habits vary based on factors such as gender and education level. Female students were found to spend more time on social media platforms, while male students predominantly engaged with online games and digital entertainment tools. However, the effects on academic performance were not solely related to screen time but were directly linked to the purposes for which students used their smartphones. This finding suggests that focusing solely on smartphone usage duration may not be sufficient for understanding its impact on academic success. Based on the findings, the study emphasizes the need for a more conscious approach to smartphone use in educational processes. Promoting digital literacy training can help students integrate technology more effectively into their academic journeys. Additionally, improving time management skills, reducing distractions during study sessions, and encouraging the use of academic mobile applications are recommended. Using smartphones not just as entertainment devices but as academic support tools may contribute positively to student success. Future research should explore the connections between smartphone addiction, academic performance, and psychological factors in greater detail. Specifically, experimental studies should be conducted to examine the long-term effects of smartphone use on study habits and cognitive attention processes. Such studies could also contribute to the development of educational policies and academic support programs for students.

Keywords: Smartphone use, Academic performance, Technology in education, Digital media, Media literacy.

INTRODUCTION

With the influence of the Information Age, rapid advancements in information and communication technologies (ICTs) and economic conditions have led to extraordinary transformations and changes across numerous fields (Yılmaz, 2018, p. 888). The digitalization process, in particular, has been recognized for its profound impact on societal structures, economic models, and individuals' daily habits (Kılıç, 2023). This transformation is also reflected in the field of education and has gained importance in this context (Küçüktamer & Yardibi, 2017). One of the most prominent examples of this transformation is the increasing role of smartphones in individuals' lives. Smartphones have transcended their primary function as communication devices, becoming essential tools for accessing information, facilitating learning processes, and integrating into everyday life (Ak, 2024).

The use of smartphones in education has transformed learning methods and introduced new opportunities for students. From the perspective of university students, integrating smartphones into educational processes offers a more flexible and interactive learning experience compared to traditional methods (Durukal & Armağan, 2022). However, the academic literature also addresses the negative aspects of smartphone use, including distractions, time management issues, and adverse effects on academic performance (Tavas, Ayyıldız, & Kuzkaya, 2022). Research indicates that students frequently use smartphones not for educational purposes but for social media and entertainment content, which negatively affects their study habits (Yaman, Çubukçu, Küçükali, & Kabakçı Yurdakul, 2020). Given this reality, examining the negative effects of excessive and unconscious smartphone use on academic success is of critical importance.

The primary aim of this study is to provide a comprehensive analysis of the impact of smartphone use on university students' educational processes. Specifically, it seeks to scientifically evaluate the relationship between students' social media and internet usage and their academic performance. In this context, the study addresses both the advantages of smartphone use in education and the potential risks of excessive usage, offering recommendations for more effective usage strategies.

The integration of technological advancements into educational processes, particularly the efficient use of widely adopted tools such as smartphones in learning environments, is crucial for the future of education. The existing literature presents diverse perspectives on the role of smartphones in education. For example, some studies argue that smartphones contribute positively to mobile learning processes (Borak & Beki, 2021), while others suggest that excessive smartphone use negatively impacts academic performance (Gezgin, 2019). Therefore, further scientific research is needed to understand the impact of smartphones on academic achievement and to determine how they can be used most effectively in education.

This study is based on survey findings conducted to evaluate the impact of social media use on academic performance among university students. The survey data were analyzed to explore the role of smartphone usage in educational processes and its relationship with academic success. The sample of this study consists of 637 students enrolled at Ankara Medipol University, of whom 68.4% are female and 31.6% are male. Data were collected through an online survey method, and the findings were evaluated using descriptive statistics, reliability analyses, and hypothesis testing. The results provide a comprehensive discussion of the advantages and potential risks of smartphone use in education.

Mass Media and Its Social Impacts

In contemporary societies, mass media plays a crucial role in shaping various aspects of individuals' lives, ranging from access to information to social norms and cultural interactions. The rapid advancement of technology has facilitated the widespread use of media, leading to significant transformations in social, cultural, and political tendencies (Yılmaz, 2022). Mass media is generally categorized into two main types: traditional media (television, radio, newspapers) and digital media (the internet, social media platforms). Both types serve as key instruments in shaping societal dynamics (Karaca, 2017).

In the process of globalization, mass media has emerged as one of the most influential factors accelerating the transformation of social values. While communication in traditional societies was primarily conducted face-to-face, modern societies experience rapid shifts in social norms and cultural values through media (Yılmaz, 2022; Kara, 2023). Media enables individuals to access information from diverse cultural backgrounds instantly, leading to significant transformations in identity perceptions (Aktay, Hamzaçebi, & Kara, 2021). Particularly, younger generations adapt more quickly to global culture through digital media; however, this adaptation process may also contribute to the erosion of local values over time (Kumcağız et al., 2020).

Mass media exerts profound effects on various aspects of individual and societal life, including consumption habits and moral values. The messages embedded in media content possess the power to shape public perceptions, directly influencing individuals' thought patterns and behavioral tendencies. For instance, advertisements and television programs promote specific consumption behaviors, directing individuals' lifestyles and accelerating the adoption of new consumption patterns (Yılmaz, 2022). Moreover, with the proliferation of social media platforms, social norms are evolving, traditional communication practices are being replaced by virtual interactions, and face-to-face communication among individuals is gradually diminishing (Karaca, 2017).

One of the most significant impacts of mass media is the transformation of intergenerational communication. Yılmaz (2022) highlights that digital media-driven changes in intergenerational communication have made it more challenging to preserve traditional family structures and transfer societal values across generations. For example, while younger generations predominantly access information through social media, older generations tend to prefer

traditional media. This discrepancy hinders intergenerational knowledge sharing and complicates the preservation of shared family values (Yılmaz, 2022).

As inherently social beings, humans have historically maintained interactions and collaborations with their environments to sustain their existence. Over time, these social interactions have undergone a transformation due to the integration of digital technologies into everyday life (Yılmaz & Palabıyık, 2022, p. 81). In this context, digital media has redefined social interaction patterns among individuals. Today, rather than meeting in physical spaces, people primarily communicate through social media and digital platforms. This shift has the potential to weaken social bonds and diminish face-to-face communication skills (Kumcağız et al., 2020). However, digital media also provides individuals with a vast pool of information, thereby enhancing democratic participation and strengthening freedom of expression (Karaca, 2017).

The societal effects of mass media extend across a wide spectrum, from lifestyle changes to social norms. With globalization, the influence of media has increased, fostering interactions between local cultural values and global norms. In particular, digital media has transformed communication patterns and introduced intergenerational differences in communication styles. In this process, enhancing media literacy skills and encouraging individuals to critically evaluate media content have become crucial components of adapting to the evolving media landscape.

The Use of Technology in Academic Achievement

The integration of technology into educational processes significantly influences students' academic success. Digital learning materials, online learning platforms, and smart devices enable students to access information more quickly and make their learning processes more efficient (Karaca, 2017). Through smartphones, tablets, and computers, students can easily access course materials, review lessons, and utilize various digital tools to enhance their academic performance (Kumcağız et al., 2020).

Academic achievement is a broad indicator of an individual's performance in the education process and is influenced by various factors, including cognitive abilities, motivation, learning strategies, and environmental factors (Aktay, Hamzaçebi, & Kara, 2021). The impact of technology on academic success can be better understood when analyzed in interaction with these factors.

Compared to traditional teaching methods, digital educational materials contribute to a more efficient learning process. Online education platforms, e-books, and academic databases help students gain a broader perspective on course topics and process information more quickly (Karaca, 2017). Particularly, internet-based learning resources provide students with personalized learning experiences, allowing them to improve their academic performance (Kumcağız et al., 2020).

For example, a meta-analysis study conducted by Deniz (2019) examined the effects of technology-assisted instruction on academic achievement and attitudes in mathematics and geometry courses. The results indicated that technology-supported teaching had a moderate to high positive impact on students' success in mathematics and geometry.

In terms of academic achievement, time management is a crucial factor that directly affects student success. Technological tools assist students in organizing their study schedules, developing effective study habits, and managing their academic plans more efficiently (Aktay et al., 2021). However, excessive use of technology, particularly the overconsumption of social media platforms, negatively affects time management and leads to a decline in academic performance (Kumcağız et al., 2020).

International assessment programs such as PISA and TIMSS analyze students' academic success and the factors influencing it. Turkey's performance in these assessments provides important insights into the role of technology in education. OECD's PISA studies evaluate students' reading, mathematics, and science performance and assess the effectiveness of educational policies. These evaluations reveal that the effective use of technology in education positively contributes to students' academic achievement. According to TIMSS 2019 results, Turkish students in grades 4 and 8 performed above the international average in mathematics and science.

The impact of technology on academic achievement is twofold. When used correctly, it serves as a valuable tool that enhances learning efficiency and supports educational processes. However, excessive use or misuse of technology can lead to distractions and a decline in academic performance (Karaca, 2017). With the widespread adoption of smartphones, students frequently experience interruptions from notifications, which negatively impact their focus and academic success (Kumcağız et al., 2020).

The 2020 Global Education Monitoring Report by UNESCO highlights that digital technologies improve teaching and learning but also exacerbate existing social inequalities and pose privacy concerns.

A study conducted by Gezgin (2019) revealed that university students' excessive smartphone use was associated with a decline in academic performance. The findings emphasized that this decline was linked to attention deficits, lack of motivation, and difficulties in focusing on coursework. Additionally, the study found that students developed excessive dependence on social media and mobile games, which reduced their study time (Gezgin, 2019).

Similarly, Karadağ and Kılıç (2019) found that technology addiction directly negatively affects academic achievement. Their research indicated that students engage in various digital habits, including social media addiction, online gaming addiction, and instant messaging addiction, which contribute to a decline in academic performance. The study also reported that students who frequently check their phones while studying exhibited shorter attention spans and experienced difficulties in preparing for exams (Karadağ & Kılıç, 2019).

A study by Borak and Beki (2021) demonstrated that social media addiction negatively impacts high school students' academic performance. The research revealed that many students preferred spending time on social media rather than studying, which led to a decline in academic success. Furthermore, the findings indicated that increased internet usage was associated with lower academic achievement (Borak & Beki, 2021).

Based on these findings, it is evident that the integration of technology into education is an inevitable reality in modern learning environments. However, the effects of this integration on academic success must be evaluated from both positive and negative perspectives. In particular, the excessive use of smartphones and social media contributes to shorter attention spans, declining academic performance, and disruptions in study habits.

The Use of Smartphones in Education Within the Context of Digital Transformation

Digital transformation has led to fundamental changes in education systems, with smartphones emerging as one of the most crucial tools in this process. As traditional teaching methods are increasingly being replaced by digital platforms, the integration of smartphones into educational processes has introduced new learning models (Karaca, 2017). By enhancing access to information, these devices not only facilitate personalized learning experiences but also promote equal opportunities in education.

Smartphones offer significant advantages in educational settings. Students can instantly access lecture notes, e-books, and academic articles, while mobile learning applications provide opportunities for individualized learning experiences. Additionally, real-time notifications and reminders assist students in developing time management skills (Kumcağız et al., 2020). Furthermore, interactive learning materials and augmented reality applications make the learning process more engaging and effective.

From the perspective of educators, smartphones provide new opportunities for diversifying lesson content and capturing students' attention. Integrated with online tests, digital classroom applications, and interactive whiteboards, mobile devices contribute to a more interactive learning process. Educators can tailor instructional materials to match students' individual learning paces, thereby personalizing the learning experience (Kumcağız et al., 2020).

However, the use of smartphones in education also brings some negative consequences. Constant online connectivity may lead to distractions, reducing students' academic performance. Social media, mobile games, and other digital distractions can make it difficult for students to concentrate on their coursework (Karaca, 2017). Moreover, excessive screen time can result in eye strain and sleep disturbances. Additionally, for students from low socioeconomic backgrounds, the intensive use of mobile devices in education may contribute to digital inequality. When equal access to education is not ensured, some students may be unable to fully benefit from technology-based learning processes.

The impact of smartphones in education depends on how students utilize this technology. When balanced and mindful use is maintained, smartphones can serve as powerful tools to enhance students' academic performance. However, unregulated and excessive use may be detrimental to academic success. Therefore, it is essential to promote digital literacy among students and encourage productive technology usage habits.

METHOD

This study is a quantitative research designed within the framework of a relational survey model to examine the relationship between university students' social media usage habits and their academic performance. Quantitative

research involves a systematic data collection process based on observable and measurable data (Kazan, 2016). In such studies, statistical methods are used to determine the relationships between variables, thereby increasing the objectivity of the research (Daşdemir, 2016). The relational survey model is a research method used to identify relationships between two or more variables without seeking causality; rather, it aims to present the existing situation (Balci, 2013). The population of the study consists of all undergraduate and associate degree students enrolled at Ankara Medipol University. In sampling selection, the voluntary sampling technique, a non-probability sampling method, was employed. In this method, participation in the study depends on individuals' voluntary choice, making it a widely used technique in non-probability sampling methods (İslamoğlu & Alnaçık, 2016). Participation in the study was entirely voluntary, and students from all faculties and class levels were included in the research. This sampling method aimed to broaden the study's scope by incorporating students from various academic programs and class levels. A structured questionnaire consisting of three main sections was used as the data collection tool. Surveys are among the most commonly used data collection techniques in quantitative research, as they aim to systematically measure participants' opinions on specific topics (Aziz, 2013). The first section of the questionnaire included dichotomous (yes/no) questions measuring smartphone usage and online gaming habits. The second section comprised 5-point Likert scale questions assessing the impact of internet and social media usage habits on academic performance. Likert scales are valid and reliable measurement tools widely used to assess individuals' attitudes (Kozak, 2018). The third section contained 5-point Likert scale questions evaluating academic procrastination and time management behaviors. Additionally, the questionnaire included demographic questions to determine participants' personal information and family educational background. The collected data were analyzed using SPSS Statistics Software, version 27.

FINDINGS

The research findings indicate that internet usage duration does not have a direct effect on Grade Point Average (GPA). Similarly, the purposes of internet usage, such as completing assignments, reading news, listening to music, playing games, or general browsing, do not have a statistically significant impact on academic performance. Likewise, social media usage and the preferred type of social media platform were not found to have a significant relationship with GPA. These findings suggest that internet usage alone is not a determining factor in academic performance.

Table 1: Age Distribution of Participants

Age Range	n	%
17-22	551	86.50
23-28	77	12.10
29-34	8	1.30
35 and above	1	0.20
Total	637	100.00

Not. N = 637.

Upon examining **Table 2**, which presents the **age distribution of participants**, it is observed that the **majority of the sample**, consisting of **637 individuals**, falls within the **young age group**. The highest participation rate is in the **17–22 age range**, with **551 participants (86.50%)**. The **second-largest age group** is **23–28 years old**, comprising **77 participants (12.10%)**. In the **29–34 age range**, there are **8 participants (1.30%)**, while only **1 participant (0.20%)** falls into the **35 and older** category. The **demographic structure of the sample** indicates that the **majority of participants are young adults**, particularly **university-aged individuals**, who are **highly represented in the study**.

Table 2: Internet Usage Habits

Daily Usage (Hours)	n	%
0-2	52	8.20
3-5	292	45.80
6-8	197	30.90
8-10	71	11.10
12 and above	25	3.90
Total	637	100.00

Not. N = 637.

Table 4 provides a detailed overview of participants' daily internet usage habits. The sample consists of **637 individuals**, and internet usage duration has been categorized into **five different groups**. One of the most notable findings of the study is that **the majority of participants use the internet for 3–5 hours per day**. This group comprises **292 individuals, representing 45.80% of the sample**. The **second most common usage range is 6–8**

hours per day, with **197 participants (30.90%)**. Those who use the internet for **0–2 hours daily** constitute **8.20% (52 participants)**, while **11.10% (71 participants)** use the internet for **8–10 hours per day**. The smallest group consists of individuals who use the internet for **12 hours or more per day**, comprising **only 25 participants (3.90%)**. The data clearly indicate that **the vast majority of participants (76.70%) use the internet between 3 to 8 hours per day**.

Table 3: Primary Purpose of Internet Usage

Purpose	n	%
News-Newspaper	18	2.80
Internet Browsing	70	11.00
Music-Games	45	7.10
Assignments-Research	103	16.20
Social Media	401	63.00
Total	637	100.00

Not. N = 637.

Table 5 presents a detailed overview of the primary purposes of internet usage among participants. Within the sample of **637 individuals**, **social media** emerges as the most prevalent reason for internet use by a significant margin. **63.00% (n = 401) of participants identified social media as their primary purpose for using the internet.** The **second most common purpose is homework and research**, with **16.20% (n = 103) of participants selecting this option.** **General browsing ranks third**, accounting for **11.00% (n = 70) of responses**, while **music and gaming-related usage follows at 7.10% (n = 45).** The **least common purpose for internet usage is following news and newspapers**, chosen by **only 2.80% (n = 18) of participants.** The findings clearly indicate that **social media plays a dominant role in internet usage among young participants.**

Table 4: Academic Performance Distribution

GNO	n	%
0.50-0.99	8	1.30
1.00-1.49	7	1.10
1.50-1.99	11	1.70
2.00-2.49	57	8.90
2.50-2.99	157	24.60
3.00-3.49	257	40.30
3.50-4.00	140	22.00
Toplam	637	100.00

Not. N = 637. GNO = Grade Point Average (GPA).

Table 7 presents a detailed distribution of participants' Grade Point Average (GPA). Within the sample of **637 individuals**, the **largest group** in terms of **academic performance** consists of students with a **GPA range of 3.00–3.49**, comprising **257 participants (40.30%)**. The **second-largest group** includes students with a **GPA range of 2.50–2.99**, representing **24.60% (n = 157) of the sample.** The **high academic performance category (GPA 3.50–4.00)** consists of **140 participants (22.00%)**. In the **moderate performance category (GPA 2.00–2.49)**, **57 participants (8.90%)** were identified. In the **low academic performance categories (GPA 0.50–1.99)**, a total of **26 students (4.10%)** were recorded. The findings clearly indicate that **the vast majority of participants (86.30%) have a GPA of 2.50 or higher**, demonstrating **moderate to high academic performance.**

Table 5: Device Usage for Internet Access

Device Type	n	%
Smartphone	564	88.50
Laptop	21	3.30
Desktop Computer	16	2.50
Tablet	36	5.70
Total	637	100.00

Not. N = 637.

Table 8 provides a detailed overview of the types of devices participants use to access the internet. Within the sample of **637 individuals**, **smartphones** stand out as the **most widely used internet access device** by a significant margin. **88.50% (n = 564) of participants reported using a smartphone for internet access.** The **second most preferred device is the tablet**, used by **5.70% (n = 36) of participants.** **Laptops** account for **3.30% (n = 21)**, while **desktop computers** are the least commonly used device, with **2.50% (n = 16) of participants**

selecting this option. The findings clearly indicate that **mobile devices, particularly smartphones, have become the dominant means of internet access among young participants.**

Table 6: Daily Smartphone Usage Duration

Usage Duration	N	%
3-5 hours	290	45.50
6-8 hours	192	30.10
0-2 hours	72	11.30
8-10 hours	65	10.20
12 hours and above	18	2.80

As part of the study, participants' **daily smartphone usage duration** was examined. The findings indicate that the **majority of participants (45.50%, n = 290) use their smartphones for 3–5 hours per day.** This is followed by **30.10% (n = 192) of participants who use their smartphones for 6–8 hours daily.** Additionally, **11.30% (n = 72) of participants reported using their smartphones for 0–2 hours per day,** while **10.20% (n = 65) use them for 8–10 hours daily.** The **lowest proportion** consists of participants who use their smartphones for **12 hours or more per day (2.80%, n = 18).** These findings clearly indicate that **the majority of participants (75.60%) use their smartphones for 3–8 hours per day.**

Table 7: Kolmogorov-Smirnov Normality Test Results for Survey Items

Items	İstatistik	df	p
When my phone does not have signal or I cannot access a wireless Internet connection, I constantly check whether there is a signal or if I can find a wireless connection.	0.442	637	<.001
If I have not looked at my smartphone for a while, I feel a strong urge to check it.	0.355	637	<.001
When my smartphone is not with me, I feel discomfort due to not being able to stay updated on social media and other online networks.	0.440	637	<.001
I believe that students should be allowed to use smartphones during class.	0.378	637	<.001
There have been times when I missed classes because I stayed up late playing online games.	0.537	637	<.001
My sleep schedule has been disrupted due to playing online games.	0.503	637	<.001
I have postponed my tasks in order to achieve my goals in online games.	0.481	637	<.001
Online gaming is a source of income for me.	0.540	637	<.001
I feel that the time I spend on the Internet is not sufficient for me.	0.318	637	<.001
In my free time, I check whether my friends have updated their profile pictures.	0.337	637	<.001
I cannot stop myself from thinking about what kind of posts I should share online to attract attention.	0.446	637	<.001
The time I allocate for chatting with my friends on social networks is insufficient.	0.325	637	<.001
I cannot keep a social media account deactivated for more than 24 hours, even if I want to stop using it.	0.325	637	<.001
I fail in my attempts to reduce my Internet usage.	0.225	637	<.001
I cannot refrain from accessing the Internet during class breaks.	0.192	637	<.001
When my Internet connection is lost, I feel incomplete.	0.200	637	<.001
İnterneti uzun zaman kullanmadığım durumlarda kendimi daha sinirli hissedirim.	0.315	637	<.001
If I do not use the Internet for a long time, I become more irritable.	0.228	637	<.001
I use the Internet beyond the daily time limit I have planned.	0.212	637	<.001
After completing my necessary online tasks, I cannot stop my desire to continue using the Internet.	0.221	637	<.001
I avoid making a plan regarding my Internet usage duration.	0.381	637	<.001
If I do not receive any notifications from the Internet, I check whether my friends are online.	0.191	637	<.001
I feel the urge to use social media during class.	0.178	637	<.001
I believe that in order to achieve greater academic success, I should use social media less.	0.166	637	<.001
I have used social media as a way to escape from negative emotions related to my courses.	0.262	637	<.001

Items	İstatistik	df	p
I am not interested in what is taught at school; what I learn from social media is more instructive.	0.222	637	<.001
Even when I need time to study, I spend time on social media and do not realize how hours pass.	0.208	637	<.001
When I have assignments to complete, I first try to seek support from social media.	0.208	637	<.001
Social media increases my motivation for courses.	0.253	637	<.001
Social media enhances the retention of course content.	0.199	637	<.001
I postpone studying for exams or completing my assignments until the last minute.	0.222	637	<.001
Even though I am aware that I need to study for exams or complete my assignments, I do not do so.	0.240	637	<.001
When I am given a task related to my coursework, I usually put it aside and almost forget about it until the deadline approaches.	0.202	637	<.001
I frequently realize that I procrastinate on completing important tasks.	0.208	637	<.001
While studying for an exam or working on my assignments, I get distracted by entertaining content on the Internet.	0.160	637	<.001
I believe that reducing the time I spend on social media will enhance my academic performance.	0.164	637	<.001
When I aim to manage my time more effectively, my social media addiction prevents me from doing so.	0.207	637	<.001
If I do not use the Internet for a long time, I feel empty and struggle to concentrate on my coursework.	0.227	637	<.001
When I make a plan to manage my time, I have difficulty adhering to it due to my interest in social media.	0.243	637	<.001

Note. $N = 637$. All tests were found to be significant at the $p < .001$ level, indicating non-normal distributions. The Lilliefors significance correction was applied.

In order to test whether the survey items used in the study met the assumption of normal distribution, the Kolmogorov-Smirnov test was conducted. The test results indicated that all items ($N = 637$) yielded statistically significant results ($p < .001$). The highest test statistic value was observed for the item "Online gaming is a source of income for me" (Statistic = 0.540), while the lowest test statistic value was found for the item "While studying for my exam or working on my assignments, entertaining content on the Internet distracts me" (Statistic = 0.160). According to the test results, which were adjusted using the Lilliefors significance correction, none of the items exhibited a normal distribution. These findings suggest that non-parametric statistical methods should be employed in the study. The non-normal distribution of the data indicates that participants' responses regarding their Internet and social media usage habits are concentrated in specific directions.

Table 8: Scale Reliability Statistics (AT).

Reliability Criterion	Değer	N
Cronbach's α	.634	8
Cronbach's α (Standardized)	.654	8

The reliability analysis results of the scale measuring smartphone usage indicate that the Cronbach's alpha coefficient for the 8-item scale is .634. The standardized Cronbach's alpha value was calculated as .654. These values suggest that the scale has an acceptable level of internal consistency reliability. The small difference between the standard and standardized alpha values (.02) indicates that there are no substantial variations in the variances of the scale items.

Table 9: Item-Level Descriptive Statistics (AT).

Item	M	SD	N
When my phone does not have a signal or I cannot access a wireless Internet connection, I constantly check whether there is a signal or if I can find a wireless connection.	0.70	0.46	637
If I have not looked at my smartphone for a while, I feel a strong urge to check it.	0.47	0.50	637
When my smartphone is not with me, I feel uncomfortable because I cannot stay updated on social media and other online networks.	0.31	0.46	637
I believe that students should be allowed to use smartphones during class.	0.57	0.50	637
I have missed classes because I stayed up late playing online games.	0.07	0.26	637

Item	<i>M</i>	<i>SD</i>	<i>N</i>
My sleep schedule has been disrupted due to playing online games.	0.17	0.38	637
I have postponed my tasks to achieve my goals in online games (such as leveling up or earning points).	0.22	0.42	637
Online gaming is a source of income for me.	0.06	0.23	637

The descriptive statistics of the items related to smartphone usage ($N = 637$) indicate that the item "When my phone does not have signal or I cannot access a wireless Internet connection, I constantly check whether there is a signal or if I can find a wireless connection" has the highest mean score ($M = 0.70$, $SD = 0.46$). This is followed by the items "I believe that students should be allowed to use smartphones during class" ($M = 0.57$, $SD = 0.50$) and "If I have not looked at my smartphone for a while, I feel a strong urge to check it" ($M = 0.47$, $SD = 0.50$). The items with the lowest mean scores are "Online gaming is a source of income for me" ($M = 0.06$, $SD = 0.23$) and "There have been times when I missed classes because I stayed up late playing online games" ($M = 0.07$, $SD = 0.26$). These findings suggest that students exhibit a high tendency to check their Internet connection and feel a strong urge to use their smartphones, whereas the negative impact of online gaming on their academic life appears to be relatively low.

Table 10: Summary Statistics for Scale Items (AT).

İstatistik	<i>M</i>	Min	Max	Range	Max/Min	Variance	<i>N</i> Items
Item Means	0.32	0.06	0.70	0.64	12.33	0.06	8
Item Variances	0.17	0.05	0.25	0.20	4.68	0.01	8
Inter-Item Covariances	0.03	0.00	0.11	0.11	-32.76	0.00	8
Inter-Item Correlations	0.19	-0.03	0.58	0.62	-18.85	0.02	8

Note. $N = 637$. M = Mean, SD = Standard Deviation, Min = Minimum, Max = Maximum.

The summary statistics for the scale items measuring smartphone usage ($N = 637$) indicate that item means range from 0.06 to 0.70, with an overall mean of 0.32. Item variances range from 0.05 to 0.25, with an average variance of 0.17. Inter-item covariance values vary between 0.00 and 0.11, with a mean covariance of 0.03. Inter-item correlations range from -0.03 to 0.58, with an average correlation of 0.19. The maximum/minimum ratios were calculated as 12.33 for item means and 4.68 for item variances. For inter-item covariance and correlations, these ratios yielded negative values (-32.76 and -18.85, respectively). These findings suggest that the scale items exhibit a moderate level of association with each other and that the internal consistency of the scale is at an acceptable level.

Table 11: Scale Reliability Statistics (KA).

Reliability Measure	Value	<i>N</i> of Items
Cronbach's α	.904	21
Cronbach's α (Standardized)	.903	21

The reliability analysis results for the scale measuring avoidance habits indicate that the Cronbach's alpha coefficient for the 21-item scale is .904. The standardized Cronbach's alpha value was calculated as .903. These values suggest that the scale has a high level of internal consistency reliability. The minimal difference between the standard and standardized alpha values (.001) indicates that there are no significant variations in the variances of the scale items.

Table 12: Scale Reliability Statistics (ZY).

Reliability Measure	Value	<i>N</i> of Items
Cronbach's α	.922	10
Cronbach's α (Standardized)	.924	10

Scale Reliability Analysis Results and Academic Performance Findings

The reliability analysis results indicate that the Cronbach's alpha coefficient for the 10-item scale is .922, while the standardized Cronbach's alpha coefficient is calculated as .924. These values suggest that the scale has a high level of internal consistency. Given that these reliability coefficients are well above the generally accepted cutoff point of .70, the scale provides consistent and reliable measurements.

From a demographic perspective, Grade Point Average (GPA) was found to differ based on gender, nationality, academic department, and year of study. Specifically, a significant relationship was observed between smartphone

usage duration and GPA among female students, whereas no such relationship was found among male students. Among Turkish citizens, a significant relationship was identified between smartphone usage duration and GPA, while for international students, a significant relationship was found between the type of social media used and GPA.

One of the most critical findings of the study is the negative impact of smartphone and online gaming addiction on academic performance. As addiction levels increased, GPA decreased, while internet and smartphone usage duration increased. This effect was particularly pronounced among students aged 17-22, international students, and first-year undergraduate students. Similarly, an increase in social media addiction was associated with a decrease in GPA and an increase in internet and smartphone usage duration.

Regarding time management skills and academic procrastination behavior, a decline in time management skills and an increase in procrastination behavior were found to be associated with lower GPA and increased internet and smartphone usage. This effect was particularly evident among undergraduate students, Turkish citizens, and individuals aged 17-22. However, among graduate students, these effects were found to be less pronounced or statistically insignificant.

From a socioeconomic perspective, the family's monthly income level was found to have a significant impact on internet usage, smartphone usage, and social media consumption. Additionally, significant differences were observed between the geographical region in which the family resides and both GPA and social media usage. While parental education levels influenced GPA, the mother's education level was also found to impact the purpose of internet usage.

Although addiction levels did not show significant differences based on gender or age groups, partial differences were found among different academic programs. While no significant difference was observed in the mean scores of smartphone and online gaming addiction across educational programs, significant differences were found in social media addiction, time management, and procrastination habits.

This study demonstrates that the impact of technology usage on academic success is not direct but rather mediated by addiction levels and usage purposes. Specifically, smartphone, online gaming, and social media addiction negatively affect time management skills, thereby reducing academic performance. In light of these findings, it is essential to regulate university students' technology usage habits, enhance time management skills, and promote conscious and responsible use of the internet and smartphones.

Smartphone Usage and Academic Achievement

The study examined the relationship between students' Grade Point Average (GPA) and smartphone usage duration. The findings indicate a negative correlation between increased smartphone usage time and academic achievement. Specifically, students who used their smartphones for eight or more hours per day exhibited significantly lower GPA scores.

Additionally, the relationship between the purpose of smartphone usage and academic achievement was analyzed. Students who used their smartphones for studying and academic research had higher GPA scores, whereas those with higher rates of social media and entertainment-related smartphone usage demonstrated lower academic performance.

Smartphone Usage and Academic Procrastination

A significant relationship was found between smartphone usage duration and academic procrastination tendency. Specifically, students who used their smartphones for six or more hours per day were more likely to postpone their assignments and exam preparations. Additionally, participants with higher levels of smartphone addiction experienced greater difficulties in time management. This finding highlights the negative impact of smartphone usage on academic processes. The analyses revealed that as smartphone addiction increased, students' academic procrastination behaviors also increased. Furthermore, students who exhibited academic procrastination tendencies allocated more time to entertainment-oriented smartphone activities, such as social media and gaming.

Gender and Smartphone Usage

The study also examined the relationship between gender, smartphone usage duration, and academic achievement, yielding the following results. Female students generally spent more time using smartphones and had higher social media usage rates. In contrast, male students engaged more frequently in gaming and other online activities. Overall, female students exhibited lower academic procrastination tendencies compared to male students. These findings suggest that gender may be a determining factor in smartphone usage habits.

The results of the study indicate that the impact of smartphone usage on the educational process varies depending on the purpose and duration of use. Students who used their smartphones for studying, academic research, and completing assignments demonstrated higher academic achievement, whereas social media and gaming-oriented smartphone use negatively affected academic performance. Additionally, academic procrastination and time management difficulties became more pronounced as smartphone usage time increased. These findings emphasize the importance of students regulating their smartphone usage habits and managing their academic processes more efficiently.

Conclusion and Recommendations

This study was conducted to examine the impact of smartphone usage on university students' educational processes. The findings indicate that the duration and purpose of smartphone usage significantly affect students' academic achievement, time management skills, and academic procrastination behaviors.

The results suggest that an increase in smartphone usage duration may lead to a decline in academic performance. In particular, the widespread use of smartphones for social media and entertainment purposes negatively influences academic processes. Key factors determining academic success include students' study duration, academic motivation, and time management skills. However, excessive smartphone use directly affects these factors, leading to adverse outcomes for academic achievement.

Another critical finding of this study is the significant relationship between smartphone addiction and academic procrastination. A considerable proportion of students acknowledge that prolonged smartphone use negatively impacts their academic processes. Specifically, students who use their smartphones for six or more hours per day exhibit a higher tendency toward academic procrastination. Delayed initiation of studying, missed assignment deadlines, and last-minute exam preparations directly influence students' academic performance.

Furthermore, smartphone usage habits vary based on gender and purpose of use. Female students are more likely to engage in social media, while male students spend more time on online gaming and entertainment-related activities. However, excessive smartphone use negatively affects academic performance for both groups. The study's findings highlight multiple ways in which excessive smartphone use adversely affects academic processes:

- Using smartphones during class disrupts students' attention and concentration, hindering the learning process.
- Students often underestimate their actual screen time, spending more time on their smartphones than they initially planned.
- The tendency to procrastinate academic tasks increases as smartphone usage duration rises.
- Late-night smartphone use reduces sleep duration, negatively affecting academic performance.
- Excessive smartphone use fosters addiction-like tendencies, reducing students' motivation for academic engagement.

Given these adverse effects, raising awareness about smartphone usage and improving time management skills are of significant importance.

Recommendations

Based on the study's findings, the following recommendations are proposed to help students use smartphones more effectively and manage their academic processes more efficiently:

- Universities should organize seminars and training programs to raise awareness about the impact of excessive smartphone use on academic achievement. Students should be encouraged to use their smartphones not only for entertainment and social media but also for academic purposes. Mobile learning applications, digital libraries, and academic podcasts could serve as valuable tools in this regard.
- Developing students' digital literacy skills should be a priority. Universities may offer digital media literacy courses and introduce students to concepts such as digital minimalism.
- Students should be encouraged to use digital time management tools such as the Pomodoro technique, digital calendars, and to-do list applications to organize their academic schedules more effectively. Additionally, reminders, note-taking apps, and audio lecture recordings could enhance students' productivity.
- Periodic social media and smartphone detox programs could be implemented at universities to support students' academic success. Universities could also offer training on digital awareness and minimalism, encouraging students to set usage limits, disable notifications, and monitor screen time.

- Instructors should implement strategies to limit smartphone use during class and integrate course materials into digital platforms. Tools such as QR codes, digital assessments, and interactive learning materials could promote the use of smartphones as an educational resource.
- Universities should provide digital opportunity equity programs, including free internet access, digital library resources, and device support programs for students from low socioeconomic backgrounds. Additionally, academic materials should be available not only online but also in printed or offline-accessible formats.
- AI-assisted personalized learning tools could be introduced to adapt to individual students' learning paces and improve academic performance.
- Workshops and counseling services should be offered to teach students effective time management strategies.
- Game-based learning methods could be incorporated into educational programs to enhance student motivation.

Future Research Directions

This study highlights the significant effects of smartphone use on university students' academic processes. The findings suggest that academic success can be improved by consciously regulating smartphone usage habits. Raising awareness about the adverse effects of excessive smartphone use, implementing time management strategies, and utilizing technology effectively for educational purposes are crucial steps in mitigating its negative impacts.

Future research should further investigate the relationship between smartphone addiction and academic performance by considering additional variables such as social media addiction, attention deficit, and anxiety. Understanding these relationships in greater depth could contribute to the development of targeted intervention programs. Additionally, examining the association between smartphone addiction and academic achievement in different contexts may provide insights into how students can integrate technology into their academic lives more consciously and effectively.

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