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Impact of Digital Lifestyle Patterns on Academic Achievement among Undergraduate Students

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ABSTRACT

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As digital technologies have become a central part of the lives and learning experiences of undergraduate students, their communication, learning, and access to education have all been significantly impacted. This study was conducted to examine the effect of digital lifestyle patterns, such as social media use, screen time, and internet learning activities on the academic performance of undergraduate students. The research approach used was quantitative, and the research design was explanatory correlation research. The data were gathered from the students of under graduate level by using a structured questionnaire on a five-point Likert rating scale. Descriptive statistics, reliability analysis, Pearson's correlation analysis, and simple linear regression were used in analyzing the collected data. The results indicated that there are significant positive effects of social media use, screen time, and use of online learning activities on students' academic performance. Thus, the three null hypotheses were rejected. The study has concluded that purposeful and productive use of digital technologies can contribute to undergraduate students' academic achievement. Students and educational institutions are encouraged to encourage and support responsible digital citizenship, effective screen-time management, and purposeful digital learning to improve academic learning and outcomes.

Introduction

Digital technology is now part of the life of the modern student of HE, fully impacting their academic behaviours and learning. As digital tools become an integral part of our educational systems, students' access to information, task completion, and learning engagement with content has been changed, according to OECD (2022). In this context, students in undergraduate programs tend to go to greater lengths to use their smartphones, laptops, and Internet resources for academic and non-academic purposes. According to UNESCO (2023), digital transformation has enhanced accessibility and flexibility for learning but has also posed challenges such as reduced attention span, lack of self-control, and time management for students. In this context, some recent problems in which social media has played a major role are linked to the academic performance of students. In this sense, a number of recent problems with social media emerged as a dominant factor affecting the performance of students in the academic field. Overusing social media platforms can result in lack of concentration, reduced productivity, and distraction, particularly when it

comes in the way of studying (Paterna et al., 2024). Likewise, University students were found to suffer from cognitive fatigue, disrupted sleep patterns, and reduced efficiency in academic performance with high screen time use (Alarifi & Song, 2024). However, when structured online learning is a part of the learning process, it can increase student engagement and offer flexible learning opportunities. Finally, Wang et al. (2024) make clear that, when appropriately used, digital learning technologies can alleviate educational disadvantages and enhance participation in studies. Driven by these pros and cons, however, a small number of studies have explored the overall influence of being social media users, screen-time, and use of online learning experiences on academic success among undergraduate students, in particular, in developing settings. Thus, this research was conducted to investigate Social Media usage, screen time, and Online Learning activities on Academic Achievement of Undergraduate students.

Problem Statement

The digital agenda, with it the use of digital technologies in students' everyday life and working has grown to be a dependency for undergraduate students. Students now use social media, screen time, and online learning activities to create their digital lifestyle patterns, which could be having an impact on the schoolwork they complete. Technology is a great tool for learning and communicating, but high usage of technology tools such as social media and extended periods of screen time can be detrimental to students' focus, time management, and academic work. Earlier studies focused mainly on assessing these factors individually, and only a few on the multifaceted influence of these factors in the context of digital lifestyle patterns, especially among university students in developing countries. Schools may struggle to foster healthy digital habits and support students' academic success without awareness of how these behavioral patterns are impacting academic performance. So, the objective of this study is to analyze the purpose of the digital lifestyle that influences students' academic success as undergraduate students.

Significance of the Study

This study reviews the relationship between the academic performance of undergraduate students and digital lifestyle habits related to social media use, duration of screen time, and the use of online educational materials. The study is significant because the use of digital technologies has become a major part of students' daily lives and can negatively or positively affect the students' academic achievement in the classroom. To create digital lifestyle patterns and their relationship with academic achievement, it is important to understand how digital lifestyle patterns influence academic achievement, so that students can develop them into healthier patterns and achieve better learning results. This study can benefit the undergraduate student population by raising awareness of the academic impact related to social media usage, screen time, and online engagement in academic activity. It can be helpful for teachers and educational management to have insight that can help in the effective use of digital technologies in the learning process. In addition, this study adds to the literature, and the results give evidence for the influence of various factors in digital lifestyle on academic achievement. The results are also helpful for future researchers who may be interested in further study related to digital technology and higher education.

Research Objectives

- To examine the impact of social media usage on the academic achievement of undergraduate students.
- To assess the impact of screen time on the academic achievement of undergraduate students.
- To investigate the impact of online learning activities on the academic achievement of undergraduate students.

Research Questions

1. What is the impact of social media usage on the academic achievement of undergraduate students?
2. What is the impact of screen time on the academic achievement of undergraduate students?
3. What is the impact of online learning activities on the academic achievement of undergraduate students?

Hypotheses (H₀)

- H₀₁: There is no significant impact of social media usage on the academic achievement of undergraduate students.
- H₀₂: There is no significant impact of screen time on the academic achievement of undergraduate students.
- H₀₃: There is no significant impact of online learning activities on the academic achievement of undergraduate students.

Literature Review

The digital technologization of student learning in recent years has radically changed student learning practices and their learning experiences. Social media usage, screen time, and online learning activities are very influential among undergraduate students these days, affecting academic achievement. Communication and academic activity can be done via social media networks, though too much of this activity could distract one away from his/her studies and consequently add pressure for less time to study. Likewise, as much as it has been linked to positive educational engagement, increased screen time also has a link with negative results/or effects like fatigue, decreased attention/ability to concentrate, and academic performance when not properly managed. Conversely, online learning activities are becoming an integral component of contemporary education, providing access to information from learning materials and interactive learning experiences that is flexible. However, research in Pakistan and around the world in the recent period reveals mixed results for these digital factors. Others point to their overall positive effect on learning opportunities, engagement, and access to information, while others note negative effects upon students' academic performance from overuse, lack of self-discipline and digital distraction. Thus, it is essential to examine these variables in the context of undergraduate students' academic achievement in the context of education. A review of literature was conducted on recent publications in a library during the last five years (2021-2026) concerning social media usage, screen time, online learning activities, and their effect on the academic achievement of university students in Pakistani and international environments, respectively.

Theoretical Framework

The present study was guided by three theories, which are Social Cognitive Theory, Displacement Theory, and the Technology Acceptance Model (TAM). Theories are used as a basis that can be applied to the development of an understanding of the impact of digital lifestyles on the academic achievement of undergraduates. Each theory offers a way to understand a different facet of students' online experiences and whether they might be linked to their performance in school.

Social Cognitive Theory

Bandura (1986) created the Social Cognitive Theory. The theory proposes that personal characteristics, environment, and behavioral experiences all affect human behavior. Learning is thought to occur in people by observing, interacting, and experiencing in their surroundings. In this study, 'social media usage' and 'online learning activities' represent important aspects of students' digital environment. They can shape the learning process, motivation, and engagement of school students during their digital experiences. Thus, the SCT can be an important theoretical approach to analyzing how learners' interactions with digital technologies can relate to academic outcomes.

Displacement Theory

Displacement Theory states that a rise in involvement in a given activity may result in a decrease in involvement in other activities. The theory postulates that overuse of digital activities could detract from the time that could be spent studying, doing homework or on academic activities. In the context of the present study, overuse of social media and too much screen time can decrease the time students spend on learning activities. This can therefore lead to a detrimental impact on academic achievement if digital activities create distractions to learning tasks. Hence, Displacement Theory is an imperative approach when analyzing the connecting relationship between social media use, screen time, and academic outcomes in terms of how digital media displaces academics, especially in the event of excessive use of digital media that hinders students' academic duties.

Technology Acceptance Model (TAM)

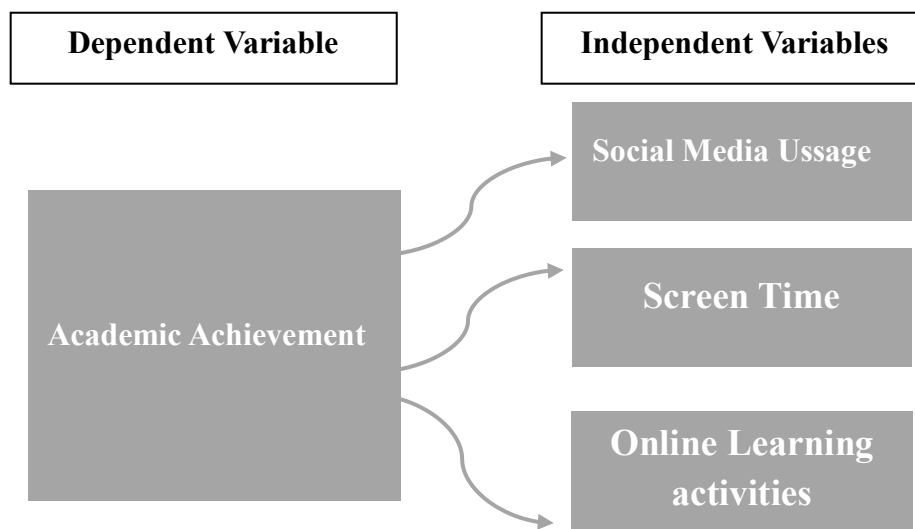
Davis' 1989 Technology Acceptance Model (TAM) describes the acceptance and use of technology. Based on the model, the more an individual thinks that a technology would be beneficial and usable, the more likely they will be to incorporate it. The possibility of implementing online learning activities for students in higher education might be contingent on their acceptance and assimilation of digital learning technologies. If students consider the online learning system helpful in studies, they are more likely to join online classes, observe educational content, execute online tasks, and engage with online learning resources. Therefore, TAM can serve as a theoretical foundation to explain the acceptance and use of online learning technologies that can be correlated with student achievement.

These three theoretical lenses are appropriate for the current research. The digital environment and students' learning behaviors are explained from Social Cognition Theory; the digital environment can disrupt students' academic responsibilities from Displacement Theory; and students' acceptance and use of digital learning technologies are explained from the Technology Acceptance Model. These views all contribute to the discussion of social media utilization, screen time, and online educational experiences engaged in by undergraduate students and their academic success.

Conceptual Framework

The conceptual framework of this study explains the relationship between digital lifestyle patterns and academic achievement among undergraduate students. In this study, Digital Lifestyle Patterns is the independent variable, which consists of three dimensions: Social Media Usage, Screen Time, and Online Learning Activities. These factors represent the different ways students interact with digital technologies in their daily and academic lives. Academic Achievement is the dependent variable, which refers to students' academic performance and educational outcomes. The framework assumes that digital lifestyle patterns may have either positive or negative effects on students' academic achievement. Therefore, this study aims to examine how social media usage, screen time, and online learning activities influence the academic achievement of undergraduate students.

Figure 1



Social Media Usage and Academic Achievement

Social media has become increasingly integral to the daily lives of university students, and communication, information sharing, collaboration, and interactions have become an important domain of their university life. By leveraging platforms like WhatsApp, Facebook, YouTube, and other social media sites, users can share learning materials, interact with other students and educators, and access learning content. A systematic review with a specific focus on Pakistani university students concluded that social media is not only used for social interaction but also others like knowledge sharing, job-related information acquisition, cross-cultural interaction, and others, which are also linked to social media platforms. Within the reviewed literature, however, there were also

mixed findings regarding the educational benefits associated with the use of SOR, so that social media can be useful depending on how it is used and how often (Arif et al., 2024). Thus, social media use does not necessarily have a clear connection to academic performance. Use that is stimulating and educationally suitable can help students learn by making information available for them and may aid in communication and collaboration. Conversely, when a student uses excessive or problematic media, it can negatively affect their academic studies by causing them to be distracted and decreasing the time and attention devoted to their studies. A recent systematic review of studies on social media and academic achievement found mixed results, with findings indicating that the use of social media may be beneficial for learning interest and engagement if it is used in the right way, but also demonstrates a potential negative impact if it is used in the wrong way, as it distracts from concentration and learning ability (Putra et al., 2024). Recent meta-analytic studies also support this: Overall, the findings of a global systematic review and meta-analysis revealed that social networking addiction was negatively related to students' academic performance, and the pooled correlation coefficient revealed greater addiction to be related to poorer academic performance (Mohammadi et al., 2025). The results indicate that social media might have specific effects on academic outcomes where it is used in a regular way but then becomes excessive and/or problematic. Meanwhile, the negative association should not be confused with a negative connotation that education can be detrimental to the use of social media; education can be helpful in educationally productive ways. The importance of the Pak context is given by the fact that students of universities are using social media more for non-academic as well as academic purposes. Arif, Djanali and Khan (2024) found that there is a large variation in the effects of social media in Pakistan, with both positive and negative information available. Thus, the impact of social media use on academic performance is likely to be contingent to several other variables, including how often they use the platform, what for, their skill in controlling their social media behavior, and the amount of social media possibly taking the place of academic tasks. In general, literature indicates that the use of social media can positively influence academic success if it is done well and in moderation, while increased and poorly regulated usage can be distractive and may hinder academic success.

Screen Time and Academic Achievement

Given that graphics and phone usage have become part of the essentials of academic work, screen time is also a major element of university students' digital lives. Students may spend significant amounts of time online engaging in activities prior to online classes, reading schoolwork, studying, communicating, playing, and sharing on social media. So, screen time isn't always good, and it isn't always bad; its academic effects could rely upon the volume, function, when, and where the digital gadget is used. In recent years, more research has emerged to suggest that excessive screen time can be linked to academic problems. A large-scale study that compared university students with shorter and longer daily screen times revealed that university students who used the devices for longer periods were more likely to suffer from deterioration in their academic performance. The pooled analysis revealed that there was a positive association between screen exposure and increased odds of academic performance decline, implying that the greater the duration of screen exposure, the greater the impact on completing academic tasks (Rafiq-uz-Zaman et al., 2026). There is more than just the amount of time spent in front of a screen and academic outcomes, though. Many education-related tasks require the use of screens, such as accessing a learning management system, attending virtual education, reading, watching instructional videos, taking online education assignments, etc. Contrary to the common notion that excessive screen time causes academic problems, a recent systematic review of screen time and academic outcomes in college students noted that there was a lack of evidence linking greater and more likely appropriate use of screen time to negative academic outcomes, suggesting that research should focus on what students are doing with screen time, not its duration (Alshuwaiyer et al., 2026). New research is adding to our understanding of the academic impacts of out-of-control digital-device use. The study conducted to investigate problematic smartphone use and academic outcomes was a systematic review and meta-analysis that showed an association between problematic smartphone use and academic achievement, suggesting that problematic patterns of smartphone use can be relevant to students' academic outcomes (Paterna et al., 2024). It is consistent with the idea that screen exposure becomes problematic when it causes difficulty focusing and studying or when it detracts from students completing schoolwork. In that light, previous research in this area suggests screen time can be related to academic success, yet the effect is dependent on how and for what purpose the screen is used. While some screen time in the classroom can help with learning, too much of it in the community can detract from learning and focus. University students, therefore, need to make good use of screens to maintain their concentration, have their good study habits, and have their engagement in academia. Therefore, the present study treats screen time as an important part of the digital lifestyle patterns which may be linked to students' academic achievement.

Online Learning Activities and Academic Achievement

During and following the COVID-19 pandemic, the use of digital learning has expanded rapidly and massively, and it is becoming an accepted part of higher education. Participating in virtual classes, using learning management systems, SD music lectures, self-study using SD resources, assignments and self-tests, discussion forums, and independent study. Online learning can offer students more flexibility since sometimes learning materials can be accessed 24 hours a day, anytime, anywhere. Recent systematic research studies show there are positive effects that online learning can have on students' achievement, but the impacts are mediated by the context in which it is offered. Akpen et al. (2024) analyzed 18 studies on online learning, student performance, and engagement. They determined that some studies reported that students participating in online learning had a positive relationship to their academic performance, while other studies reported a decline in performance. The review thus shows that this is not the case of online learning having a uniform impact on learning for all students and settings. Flexibility and access are important reasons for the positive academic impact of online learning. Students will be able to listen to lectures and watch the materials again and again and practice at their own speed. Assisted by recorded videos, digital learning tools, interactive quizzes, and learning management systems, students' understanding and academic performance may be enhanced, according to Akpen et al. (2024). For students who need more time to understand hard concepts, and/or are able to absorb information on their own, these features can be quite helpful. However, online learning also has its problems, which can result in poor learning outcomes. The same systematic review confirmed some pupils were less engaged, had less engagement with their teachers and others and felt isolated in the online environment. In addition to this, the following factors were seen to be crucial in determining the effectiveness of online learning; namely internet connectivity, access to appropriate devices, technological skills and the student's motivation (Akpen et al., 2024). Over the last few decades of low-cost, convenient online teaching, one might have assumed students would be doing better in their schools than in person, but this is not the case, according to the findings. Student participation seems to be a key factor in the success of online learning activities when doing research on the subject. When researching the content of online learning activities, involvement seems to be a key to whether or not they lead to positive academic benefits. Enhancing engagement and driving learning can include interactive features like group activities, regular instructor-student interaction, discussion forums, and multimedia resources. Akpen et al. (2024) highlighted that meaningful interaction and the provision of adequate technological and instructional support is critical for enhancing not only in terms of engagement but also performance. Generally, online learning activities have positive potential to enhance learning outcomes when they are given support from effective teaching practices, stable access to digital technology, student motivation, and active involvement in learning. On the other hand, lack of connection, interaction, digital skills, and engagement can diminish the benefits to their learning outcomes. Therefore, the influence of online learning activities on students' achievement should be understood based on the quality and purpose of online learning activities that students get rather than simply the availability of any learning activities digitally.

Research Methodology

Philosophical Stance

The present study follows the post-positivist philosophical approach. The post-positivist approach is based on the notion that reality exists independently of a person's perception and that reality cannot be understood completely, as the observations are always going to be some degree of human error and bias. Hence, knowledge is viewed not as permanent but as a tentative one, which can be modified by new information. This approach is based on the principles of objectivity, empirical approach, logical thinking, and critique and aims at developing a more valid knowledge of reality. In this present study, post-positivism is an appropriate philosophy because it posits the existence of the relationship between digital lifestyle patterns and academic achievement, although it acknowledges that the relationship is not certain, but approximate.

Research Method

The method used in this study is quantitative research because this study is geared towards obtaining numerical data for analysis and also to investigate the relationship between digital lifestyle patterns and academic achievement of undergraduate students. Through quantitative research, researchers can measure variables objectively, and measure patterns, and draw questions and conclusions based on empirical data. It's suitable for research that seeks to explain the relationship between variables and provide results that can be applied to a wider population.

Research Approach

The technique of this study is deductive research. The deductive method starts from existing theories, followed by hypotheses to be tested based on empirical evidence. It takes from broad concepts to concrete observations and is aimed at establishing the validity of the assumptions placed in the theories observed within the gathered data. The current study is appropriate for this method as these are grounded in theory and previous research related to digital lifestyle patterns and academic success.

Research Design

The design used by this study was survey research with an explanatory correlational design. The overarching goal of this design was to explore the relationship and effects between digital lifestyle factors (use of social media, screen time, and use of online learning activities) and the academic performance of undergraduate students. The design represents a means of representing the relationship between the dependent and independent variables as related to one another based on the changes in the independent variables without being able to manipulate the study environment.

Population

The population of the present study was 3000 number of undergraduate students of Shaheed Benazir Bhutto University (SBBU), SBA. The chosen student population to be the primary focus of the research, centered around the relationship between digital lifestyle and academic achievement is the students in this study. The subjects comprised a cross-section of undergraduate students in various academic departments and faculties in the university. Thus, the population for the present study was all 3000 undergraduate students.

Sample Size

For this research, the total population of 3000 undergraduate students of Shaheed Benazir Bhutto University, SBA were chosen as the sample. The Krejcie and Morgan (1970) Sample Size Table was used to determine the sample size, which gave a sample size of 341 out of a population size of 3,000. Thus, 341 undergraduate students were chosen for the study. With the objective of a good diversity of the students' sample, the simple random sampling method was employed to select the respondents. This sampling technique led to greater representativeness of the sample and reliable study results.

Data Collection Procedure

This study is based on secondary data, which was collected from the students of undergraduate level of Shaheed Benazir Bhutto University (SBBU), SBA. Formal permission form especially concerned university authorities and respective department heads of university is taken before undertaking the data collection process. Using the Krejcie and Morgan (1970) Sample Size Table, a sample of 24 students was determined, and this was obtained from the total population of 3,000 students using simple random sampling. The selected respondents were sent a structured questionnaire using a scale of 1 to 5. Each of the selected respondents was given a structured questionnaire using a 1-5 scale. The aim of the study was explained to the respondents, and they were assured that the information they provided would be kept confidential and for research and academic purposes at the beginning of the questionnaire. Once the questionnaires were completed, the data were checked for completeness and accuracy, then coded for data analysis.

Data Analysis Technique

All the data gathered were coded, entered, and analyzed with the aid of Statistical Package for the Social Sciences (SPSS) Version 26. Demographic data and the study variables were summarized using descriptive statistics such as frequency, standard deviation, mean scores and percentage. Cronbach's Alpha reliability was used to check the reliability of the research instrument. Additionally, inferential statistical analysis tools such as Pearson correlation analysis and multiple linear regression analysis were used to analyze the relationship of the variables of the research and to test the research hypotheses. The findings were displayed in tables and interpreted as per the objectives of the study.

Ethics

All ethics were adhered to in this study. The collection of the data was done with the permission of the university. There was informed the reason of the study with the participants and everyone will participate in the study. All respondents have given informed consent. Participant confidentiality and anonymity were ensured, and data were gathered for academic research. The participants were allowed to withdraw from the study at any time. The researcher was honest and precise in data collection, analysis, and communicating the results.

Data Analysis and Results

Demographic Information

Table 1

Gender Distribution of Participants

Gender	Frequency (f)	Percentage (%)
Female	188	55.0
Male	153	45.0
Total	341	100.0

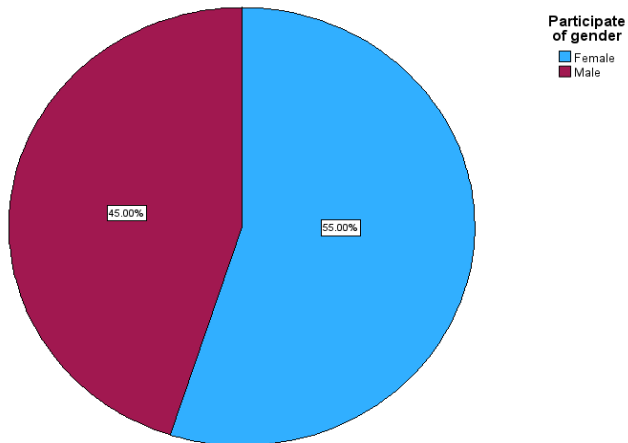


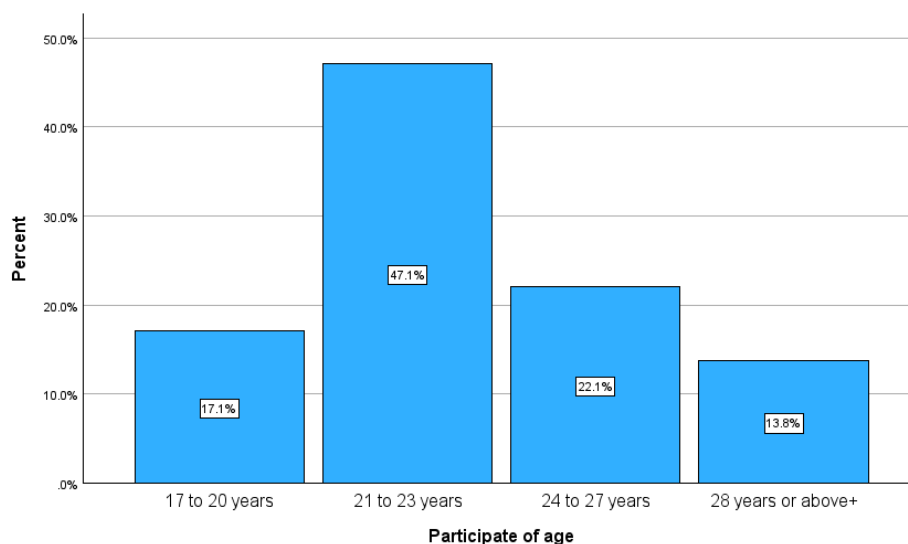
Table 1 shows the gender of the participants: The findings revealed that the sample size was largely female (55%), with the male having 45%. This indicates that the female students took a high percentage in the study than the male students.

Age Distribution of Participants

Table 2

Age Distribution of Participants

Age Group	Frequency (f)	Percentage (%)
17 to 20 Years	58	17.0
21 to 23 Years	160	47.0
24 to 27 Years	75	22.0
28 Years to above	48	13.0
Total	341	100.0



The age distribution of the participants is seen in Table 2. The results indicated that of the 341 respondents highest population group was 21-23 years (n=160, 47.0%). Participants in the 24 - 27 age group (75 participants, 22.0%) followed. The age group 17-20 had the highest number of participants (58, 17.1%), ensuring that the age group was fairly distributed, with the smallest being at 28 years and above with 48 participants (13.8%). The overall results showed that the majority of the respondents were in the younger age group as the majority of this age group represented 21-23 years nearly half of the total respondents. The smaller percentage of respondents aged 28 and older suggest that most of the respondents were young. This age distribution conforms to the characteristics of the target population of this research, and easy to see the age of the respondents.

Descriptive Statistics of Study Variables

Table 3

Descriptive Statistics of Study Variables

Variable	N	Min.	Max.	Mean (M)	(SD)
Social Media Usage	341	2.50	5.00	4.05	0.58
Screen time	341	2.00	5.00	4.07	0.61
Online Learning Activities	341	2.33	5.00	4.06	0.63
Academic Achievement	341	1.40	5.00	4.05	0.70

Table 3 shows descriptive statistics of the study variables. The descriptive statistics of the study variables are presented in table 4.3. The total number of respondents for the analysis was 341 respondents. All of the variables were scored on a five-point Likert (1=Strongly Disagree, 5=Strongly Agree). From the results screen time has the highest mean score (M = 4.07, SD = 0.61), revealing that students were generally more in agreement with the statements for screen time type. Online Learning Activities (M = 4.06, SD = 0.63) is closely followed by, where there was general agreement about the statements on online learning activities including access to online education materials, doing learning tasks and learning activities online. Likewise, Social Media Usage has a relatively high mean (M = 4.05, SD = 0.58) which implies that students fairly agree with the social platform students use. Moreover, the Academic Achievement mean score is 4.05 (SD = 0.70) denoting a relatively high agreement with the statements assessing students' academic achievement. Among the study variables, Academic Achievement has the highest SD (0.70); suggesting that the respondents scores were relatively a lot more diverse than in Academic Achievement. Responses from the participants varied with a minimum score of 1.40 indicating further minimal score. The mean values of all the four study variables range from 4.05 to 4.07 with relatively high value of agreement by the respondents in general. For the variables, Screen Time had the highest mean score followed by Online Learning Activities and Academic Achievement had equal mean scores. It should be noted that there was a relatively higher degree of variation in Academic Achievement, indicating that there may be some factors between the respondents which contribute to their difference in reported academic achievement which can be explored further in subsequent inferential analyses.

Reliability Analysis

Table 4

Reliability Analysis of Study Variables

Variable	No. of Items	Cronbach's Alpha (α)
Social Media Usage	6	.829
Screen Time	6	.842
Online Learning Activities	6	.859

<i>Variable</i>	<i>No. of Items</i>	<i>Cronbach's Alpha (α)</i>
Academic Achievement	5	.854
Overall Scale	23	.856

Table 4 is used for the reliability analysis of the variables of the study with the help of the Cronbach alpha coefficient. Table 4 is used to test the reliability of the variables under study using the Cronbach alpha coefficient. The results show that Social Media Usage has good internal consistency ($\alpha = 0.829$). Likewise, there is good reliability with Screen Time ($\alpha = 0.842$), Online Learning Activities ($\alpha = 0.859$) and Academic Achievement ($\alpha = 0.854$). For the overall scale (23 items), $\alpha = 0.856$, with high overall internal consistency. The findings of this study showed that all scales, which are used on measures in this study, exhibited good internal consistency and were acceptable for further statistical analysis.

Correlation Analysis

Table 5

Pearson Correlation Matrix of Study Variables

Variable	1	2	3	4
Social Media Usage	1	-	-	-
Screen Time	.153*	1	-	-
Online Learning Activities	.232**	.245**	1	-
Academic Achievement	.247**	.242**	.205**	1

Table 5 shows the Pearson correlation between the study variables. The results foster that there are considerable and optimistic correlations among Academic Achievement and Social Media Usage ($r = .247$, $p < .01$), Screen Time ($r = .242$, $p < .01$), and On-line Learning Activities ($r = .205$, $p < .01$). These findings imply that there seems to be a positive relationship between social media usage, screen time, and online learning activities with academic achievement across the board, as students report more positive achievements where they use social media and consume screens and spend more hours online. Such correlations, however, show associations between the variables rather than causal connections. Likewise, Online Learning Activities are positively correlated with Social Media Usage ($r = .232$, $p < .01$) and Screen Time ($r = .245$, $p < .01$). The Social Media Usage and Screen Time still have a positive statistically significant correlation, though that correlation is low (.153) among all of the correlations reported in the table above. There is the highest correlation between Academic Achievement and Social Media Usage ($r = .247$, $p < .01$) followed closely by the correlation between Screen Time and Academic Achievement ($r = .242$, $p < .01$). Overall, it seems that all of the study variables were positively and significantly related to each other, and that the significance relationship was from weak to modest.

The findings indicated that there is a correlation link between the social media use, online learning activities, and students' screen time and their academic performance.

Hypothesis Testing

The first null hypothesis (H_{01}) was: there is no significant effect of using social media on the academic achievement of students of undergraduate level. Simple Linear Regression analysis was therefore used to test this hypothesis by taking the independent variable as social media usage and the dependent variable as Academic achievement. The results are shown in Table 6.

Table 6

Regression Analysis of Social Media Usage on Academic Achievement

Predictor	B	SE	β	t	p
Constant	2.861	.307	—	9.334	<.001
Social Media Usage	.295	.075	.247	3.929	<.001

Note. $R = .247$, $R^2 = .061$, $Adjusted\ R^2 = .057$, $F(1, 238) = 15.436$, $p < .001$. $N = 240$. *Dependent variable: Academic Achievement.*

The results of the Simple Linear Regression analysis with reference to the effect of social media use on academic achievement are shown in Table 6. The results showed that social media usage has a positive statistically significant impact on academic achievement ($\beta = .247$, $t = 3.929$, $p < .001$). Overall, the regression model accounted for 6.1% ($R^2 = .061$) of the variance in academic achievement. Additionally, the overall regression model was statistically significant, $F(1, 238) = 15.436$, $p < .001$. This means that when the adolescents used more social media, the academic achievement of the undergraduate students one had more. So, the null hypothesis (H_{01}) is rejected.

Impact of Screen Time on Academic Achievement

The second hypothesis (H_{02}) stated that screen time doesn't have a significant effect on the educational outcomes of the undergraduate students. To test this hypothesis, Simple Linear Regression analysis was used to change the screen time variable to the independent variable and academic achievement to the dependent variable. The results are illustrated in the following table: Table 7.

Table 7

Regression Analysis of Screen Time on Academic Achievement

Predictor	B	SE	β	t	P
Constant	2.932	.295	—	9.948	<.001
Screen Time	.275	.072	.242	3.849	<.001

Note. $R = .242$, $R^2 = .059$, $Adjusted\ R^2 = .055$, $F(1, 238) = 14.815$, $p < .001$. $N = 240$. *Dependent variable: Academic Achievement.*

Table 7 displays results of Simple Linear Regression analysis of effect of screen time on academics. As per the findings, the relationship between screen time and academic achievement was positive sign with an r value of .242 and t value of 3.849, which were statistically significant and statistically highly significant, respectively. The model accounted for a total of five per cent ($R^2 = .059$) of the variance of academic achievement. In addition, the entire regression model was statistically significant, $F(1, 238) =$

14.815, $p < .001$. The positive regression coefficient shows that there is a positive association between the two variables among the undergraduate students in the study. Thus, null hypothesis (H_2) was rejected as there is no significant effect of screen time on academic achievement.

Impact of Online Learning Activities on Academic Achievement

The third null hypothesis (H_{03}) was "There is no significant effect of the online learning activities on the academic achievement of the undergraduate students. To prove this hypothesis, the Simple Linear Regression analysis was carried out where online learning activities as independent variable and academic achievement is dependent variable. The results are displayed in Table 8

Table 8

Regression Analysis of Online Learning Activities on Academic Achievement

Predictor	B	SE	β	t	p
Constant	3.140	.286	—	10.985	.000
Online Learning Activities	.225	.070	.205	3.234	.001

Note. $R = .205$, $R^2 = .042$, $Adjusted\ R^2 = .038$, $F(1, 238) = 10.457$, $p < .001$. $N = 240$. *Dependent variable: Academic Achievement.*

The outcome of Simple Linear Regression analysis for the effect of online learning activities on Academic achievement is presented in this item. The results show the academic achievement of the online learning had statistically significant positive effect ($\beta = .205$, $t = 3.234$, $p = .001$). The regression model accounted for 4.2% variation in the academic achievement ($R^2 = .042$). Additionally, the regression model as a whole was highly statistically significant ($F(1, 238) = 10.457$, $p < .001$). A positive regression coefficient means that there is a correlation between the online learning activities and the academic achievement of the undergraduate students, such that a higher level of participation in the online learning activities is related to higher academic achievement. Thus, the null hypothesis (H_{03}): Online learning activities are not significantly related to academic achievement was rejected.

Hypothesis Decision Conclusion

Hypothesis	Decision	Conclusion
H_{01}	There is no significant impact of social media usage on the academic achievement of undergraduate students.	Rejected
H_{02}	There is no significant impact of screen time on the academic achievement of undergraduate students.	Rejected
H_{03}	There is no significant impact of online learning activities on the academic achievement of undergraduate students.	Rejected

Discussion, Conclusion and Recommendations

This is where the discussion, conclusions, implications, recommendations, limitations and suggestions for future research are discussed based on the results of the study. The discussion follows the three goals of the research used in this study, and identifies the results in relation to the literature and theoretical perspectives represented in the preceding chapters. This study was aimed at understanding the influence of social media use, screen time, and online learning activities on the academic performance of

undergraduate students. The results show evidence of statistically significant positive effects of all three dimensions of digital lifestyle patterns on academic achievement. Thus, all three null hypotheses can be rejected. The findings offer valuable information on the relationship of students' Internet use with their academic achievement at the undergraduate level.

Discussion of Findings

Impact of Social Media Usage on Academic Achievement

The first goal of the study was to investigate relationship between social media uses and academic performance of undergraduate students. Research results showed the positive strong relationship between the use of social networking sites with academic achievement. Hence, the null hypothesis that there is no significant impact of social media usage on academic achievement was rejected. In the case of positive findings, social media can be used to facilitate learning activities of students if used for learning and productive purposes. Social media is an appropriate tool for undergraduate classes to share class members, academic knowledge, the outline of training material, and the learning material. Social media can offer avenues for academic interaction and collaboration in this manner. The result obtained in the present study agrees with the previous research. According to Hasan, Nasreen, and Tasneem (2024), students of universities are using social media for various educational and non-educational purposes, and the versatile and balanced application of social media can be helpful for the educational activities of universities. Likewise, Sultana and Ahmed (2024) emphasized the importance of social media in academic communication and collaborative learning. Farooqi, Ishtiaq, and Rasool (2024) also concluded that social media can increase learning when utilized for learning. Such studies also corroborate the present result that social media can positively be associated with students' academic achievements if used purposefully. There have been reports in the past, however, that too much and too unrestrained the use of social media could also become distractive and diminish the time devoted to academic work. Excessive use of SMM can lead to distracting situations for students, which can have an adverse effect on academic performance, as explained by Lukose and Agbeyangi (2025). Thus, the positive result of this study might be associated with the productive and the learners' aspect in their uses of social media in the learning process among the respondents. Also, the finding is supported by the Social Cognitive Theory that states that students' behaviour is determined by their experiences and environment. The use of social media plays a role in the students' digital life and affects their learning behaviour, motivation and their engagement in their education. In sum, the results indicate not to view social media as something to look down on solely as a distraction. Social media can be a tool for communication, collaboration, information sharing and learning when students are using them in a meaningful and relevant way.

Impact of screen time/digital devices on Academic Achievement

The second aim of this research was to determine the effect of screen time upon the students' learning achievement of the undergraduate students. The results indicated that screen time is significantly positively related to academic performance. Thus, the null hypothesis which assumed that there exists no significant relationship between screen time use and academic performance, was rejected. The positive finding suggests that the use of screen-based activity may be a support for students' academic achievement if the digital devices are used in the educational and productive sector of school activity. With the advent of mobile technology, undergraduates are also relying more on their smartphones, laptops, tablets, and computers for the ability to attend classes online, watch lectures, access digital educational tools and resources, finish assignments, and more. The finding of the present study is consistent with the literature that recognizes the educational benefits of digital technology. Students' academic performance can be affected by screen-based learning activities and online education (Shaheen, 2024). Likewise, in a similar manner, Younas et al. (2022) found that here digital learning and screen-based engagement can have beneficial outcomes or not, depending on students' digital practices and experiences. Further R.rafique-uz-Zaman et al 2026 also found that learning in online and blended learning environments can be effective on academic achievement when being used at an educational purpose for a specified time. The present finding should be interpreted in context of the purpose of the screen use, however. There have also been previous studies that have associated excessive screen time with distraction, tiredness, poor focus and decline in school performance. In the case of academic achievement, it was revealed by Akhtar and Asghar (2024) that students' academic achievement is adversely affected by excessive use of screens and social media, and Naseem, Latif and Ali (2025) emphasized the negative effects of overusing screens. Additionally, Pérez-Juárez et al., (2024) found that digital distractions have the potential to impact students' academic performance. Thus, the positive results of the present study indicate that digital activities are associated with positive results among the respondents, especially activities related to learning and academic activities. Additionally, it is possible to interpret computer use as problematic in view of Displacement Theory, which posits that digital activities interfere with

time otherwise spent on learning and doing assignments. The findings generally suggest that the effects of screen time should not be determined as negative one to academic performance whenever it is present. The influence is related to students' own utilization of the digital devices and also if their screen-based activity enhances or hinders their academic responsibilities in one way or the other.

Online learning activities have an impact on academic achievement

The third aim of the study was to examine the effects of online learning activities on the academic achievement of the undergraduate students. The results indicated that online learning activities are positively significant on the achievement. So, the null hypothesis that would presume no significant effect of the online learning activities on academic achievement was rejected. Positive Finding: Engaging in online learning activities is a form of support which can enhance students' academic attainment. Online learning allows students to have access to educational material, join online courses, view educational videos, log into LMS, do assignments, and message classmates and teachers during class. The results are comparable to a previous study carried out in Pakistan. In a study, Ijaz, Malik, and Javaid (2022) investigated the effect of teaching effectiveness in online mode on students' academic performance in universities in Pakistan. Similarly, Rashed et al. (2022) identified the positive effect of e-learning systems on academic achievement as a motivational and satisfaction learner that feels good with digital learning systems. Similarly, Shaikh (2023) identified that online education works best with flexibility in learning and engagement in academic work but there may be issues due to technical difficulties and connectivity issues. Moreover, Nazneen et al. (2023) added that the interactive learning approach proves successful to maximize student engagement and learning achievement in online learning. This discovery is in line with global research. Bibi and Ghafar (2025) concluded that the use of interactive and structured assessments in teaching resulted in better performance of students in online learning environments. The researchers Tareen, Ali, and Kiazai (2023) also found that student's attitudes towards online learning will have significant effect on their academic achievement. The results reported here are consistent with the current research supporting the positive effects brought about by effective engagement in online learning on achieving better academic results. Also, in terms of adaptation of the Technology Acceptance Model, it also supports the finding. In this model, the students will be more inclined to use the technology if they feel it to be useful and easy to use. Through the students' engagement in online learning activities, as detailed in this study, there is a possibility that they have accepted digital learning technologies and are aware of the value of these technologies in learning. Overall, the results indicate that online learning activities can be supportive in students' learning process. But they will only be successful if the student is motivated, the online training is good or proper, and the student interacts with the training; and there are technology-related issues, which must be resolved, and students' ability to effectively use digital platforms.

Conclusion

The current study was designed to explore digital lifestyle patterns and their effects on academic performance of the undergraduate students. The study in this instance was on the 3 core concepts of the lifestyle of digital patterns: social media usage, screen time, and online learning activities. The findings indicated that all three the following dimensions have significant positive effect on academic achievement. This means that all the three null hypotheses were falsified. In relation to the first objective, a positive significant relationship between social media use and academic achievement was discovered. This finding indicates that social media can be useful in academic settings if students leverage digital platforms to communicate & collaborate, share information/s and utilize educational content. The academic value of social media use is less than the time spent using these as a media entity, and more about purposeful use. Regarding the second objective, this study revealed that screen time (ST) statistically significantly positively affected students' academic achievement. This is an indication that the use of digital devices can complement students' learning activities, provided it focuses on learning and useful activities. The discovery also highlights the need to differentiate between learning time and learning time spent on non-academic digital activities. With the objective of increasing academic achievement, the study revealed that online learning activities had significant positive impact on academic achievement. Online classes, educational videos and other learning activities such as online learning management systems could provide students with flexible access to education, and may offer opportunities for ongoing education. This study confirms that the Academic achievement of undergraduate students has a strong relationship with their digital lifestyle patterns overall. The results reveal the digital technology neither can be deemed solely positive nor negative. Their academic use is based on the "how, why" and "for what" students use them. The use of digital technologies can facilitate communication, access to resources for learning and learning, collaboration, and engagement. Hence, schools, teachers and students need to continue to drive productive and balanced uses of digital technologies that can help achieve positive learning results.

Implications of the Study

The study reveals the following implications. The results of this study hold significance for the undergraduate students, teachers, educational institutions, and future researchers. Additionally, the findings indicate that the use of digital technologies as academic tools are suitable for undergraduate students. Social media can be used for academic discussions, sharing of learning material, promoting discussions of assignments and learning content provision. They can also access lectures, education videos, digital books and research materials and academic assignments online on their smartphone, laptop, tablet, computer etc. Meanwhile, students should learn what digital activities are productive and non-productive, as well as learn effective time management. The findings suggest that digital spaces have the possibility to facilitate student learning, student connectedness, and educators' instructional practices. There is the possibility that teachers could bring into their teaching using educational videos, online discussions, online assignments, learning management systems and the rest of suited online learning activities. Teachers may be able to advise the students on responsible social media use, effective use of screen time, and effective use of digital resources. Digital activities in a structured and interactive way could be valuable tools to enhance students' academic engagement with technology. The findings highlight the need for schools to shape learning contexts that foster relevant and valuable digital learning. Universities have the ability to offer trustworthy internet facilities, digital libraries, learning management systems, and other learning technologies. Digital literacy and awareness training, where teaching and learning are regarded in relation to effective and responsible use of digital technologies, can also be organized by the institution. Not only focus on the provision of technology, but also on acquiring skills needed to put it to good use, as well. The findings serve as a foundation for future research exploring digital lifestyle preferences and achievement. Additional factors can be added to digital, larger and more diverse samples, and research approaches can be applied for extension of the present research. This research can result in a more nuanced understanding of the impact of digital behaviours on students' learning experiences and learning outcomes.

Recommendations

Following the results and conclusions of the study, the following recommendations are made: social media should be used knowledgeably and effectively by all undergraduate students for academic communication, collaboration, and sharing and to access to help with learning. Students need to learn good time-management and find a balance between study, social media, entertainment and use of other electronic media. Students should use smartphones, laptops, tablet and computers in a productive way, benefiting from such usage by attending online lectures, watching educational videos, reading e-books, making academic tasks and researching. Digital learning activities should be used appropriately and judiciously by teachers to improve engagement with students and offer further opportunity for learning in the classroom. Students should be taught how to differentiate between productive and non-productive use of digital devices and each student should be encouraged to use a digital device in a meaningful way. Make it possible for students to carry out the learning process that will be supported by universities with digital learning resources which contain reliable internet facilities, learning management systems, digital libraries and other suitable digital learning resources. Educational institutions could organise digital literacy and awareness programmes so that students know how to use digital media responsibly, how to maintain a balance in using screen time, how to learn by using digital media and how to keep themselves from unnecessary digital distractions. Ensuring the use of online platforms for collaborative learning, peer communication, academic discussions, sharing of course material, and assignment submissions, via encouragement from the universities and the teachers. The emphasis of the schools should be more on purposeful use of digital technology for teaching and learning all the time, not just giving students more access to digital devices.

Suggestions for Future Research

The present research could be extended in several ways. To begin with, comparable tests should be performed on undergraduate students from more numbers of public and private universities in various provinces of Pakistan. This would allow for a more varied sample size and generalizability of results. Second, longitudinal research into a student's academic success or his experience of a changing digital lifestyle may be done in the future. This kind of study might help us learn more about the long-term effects of digital technology use on academic achievement. Lastly, the future studies can be designed in mixed methods. Interviews, focus group discussions, or observations could be conducted in follow-up with quantitative questionnaires to further elucidate the students' real-world digital behaviours and learning practices. A future study could involve research on other digital lifestyle aspects such as digital literacy, online gaming, digital entertainment, smartphone dependency, digital distraction, Internet accessibility and students' self-regulation skills. Fifth, comparisons can be gained between public and private university students, among students

at various academic departments, educational levels and geographic regions. Such studies can help answer if there are differences across different school contexts in the connection between the digital lifestyle patterns and academic achievement. Last, future research could explore the role of screen time in terms of the specific function, e.g. academic screen time, social media use, entertainment use, communication, other screen activities. This might give clarity on which type/s of screen use seems to be associated more closely with academic achievements. Seventh, future researchers could focus on self-regulation and digital literacy as two factors that could affect the outcomes of this relationship between "digital lifestyle patterns" and "academic achievement". This research might contribute to understanding why digital technology can have a beneficial impact on academic success for some students in some contexts, and a challenging impact for others for specific academic outcomes in specific contexts. Last but not least, further studies could build upon the study by exploring digital learning and digital lifestyle patterns of a higher education setting in Pakistan. With descriptively larger and more varied samples, multiple research methods, and other additional digital variables, one can get stronger evidence in the area of educational policy, educational practice and building effective digital use in higher education.

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