Original Article

Academic Social Media Usage, Psycho-Behavioral Responses and Academic Performance in University Students during COVID-19

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ABSTRACT

Aim of the Study: This study aimed to examine the effects of social media use on academic performance and psycho-behavioural responses in university students during COVID-19. According to the study, there is a strong link between academic social media use, psycho-behavioral responses, and academic performance. It was also proposed that academic social media use and psychobehavioural response could forecast academic success. The study also forecasted gender disparities in academic performance, psycho-behavioural responses, and social media use.

Methodology: In the two government universities in Lahore, 200 students (113 females and 87 males) were polled, using purposive sampling and a quantitative correlation study design. A demographic information sheet, consent form, student learning behaviour scale (Abbas et al., 2019), social networking usage scale (Gupta & Bashir, 2018), and a depression, anxiety, and stress scale (Lovibond & Lovibond, 1995) were all included in the questionnaire. The data were examined using Pearson correlation, independent t-tests, and moderation regression analysis.

Findings: The study found a negative correlation between academic social media usage and performance among university students. It was found that university students' academic performance during COVID-19 was negatively impacted by their use of academic social media. Significant gender-based disparities in psychological reactions like stress, anxiety, and academic performance were also discovered by the study.

Conclusion: These findings can benefit students in making better academic use of social media and aid instructors in better understanding the factors affecting student success.

Keywords: Academic Social Media Usage, Psycho-Behavioral Responses, Academic Performance, University Students, COVID-19.

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Introduction

The COVID-19 pandemic has forced Pakistani educational institutions to transition from conventional classrooms to online teaching methods. To ensure effective communication and learning, teachers and students have turned to digital tools like Google Classroom, YouTube, LMS, and Zoom. Social networking sites have become crucial for students who want to interact with their professors and debate academic issues (Abbas et al., 2019). But the pandemic has produced negative effects on students' mental health, leading to higher levels of stress, worry, sadness, and indifference, all of which can harm their academic success (Umar & Idris, 2018). In addition to exploring the psychological and behavioural responses connected to social media usage during the COVID-19 epidemic, this study aims to investigate the impact of academic social media usage on academic accomplishment among university students.

The use of social media in the sphere of education has grown crucial since it has so many benefits that advance learning. It gives users access to educational movies and data, makes it easier to communicate in real-time outside of the classroom, opens up options for cooperation, and promotes creativity. Social media also enables distant exchanges between students and teachers, giving teachers insightful information on how their pupils learn. With the freedom to communicate from any location, students can get in touch with their classmates and teachers whenever it's most convenient, promoting a more diverse and active learning environment (Shan et al., 2019).

To ensure that students can continue studying and meet their objectives, educational institutions have been obliged to modify their teaching strategies in response to the COVID-19 pandemic. Social media has been crucial in this process since it has made it possible to share lectures and connect students who need academic help. However, several students—especially those who were not accustomed to using social media for academic purposes—required assistance with their online coursework during the pandemic. These students require more time to completely understand lectures, which causes them to feel overwhelmed and exhausted when doing homework (Sivakumar, 2020).

Teachers, supervisors, or school principals assess a student's academic performance, which is essential for their success in today's educational environment, based on classroom accomplishments, graduation rates, and scores on standardized tests (Abaidoo, 2018). It's important to utilise social media carefully and moderately because excessive or inappropriate use of these sites might hurt a student's writing skills and academic performance. A drop in performance can be caused by a variety of variables, including stress, anxiety, sadness, a loss of motivation, or laziness. To continue accomplishing their goals and succeeding in their educational endeavours, students must prioritize their studies and use social media to promote their academic ambitions (Abbas et al., 2019).

Theoretical Framework

The theory of social learning thoroughly explains how interactions between outside variables and cognitive processes affect students' learning and behavioral tendencies. According to this theory, learning new knowledge is a widespread occurrence in which people gather, produce, and arrange information to identify, manage, and construct knowledge. As a result, students who participate in social activities on multiple platforms may adopt habits that have a direct impact on their academic achievement, either favorably or unfavorably. The COVID-19 epidemic has increased the relevance of social learning theory, according to recent studies. Students have therefore been forced to rely on social media platforms to support their academic involvement. Student learning and behavior patterns have been impacted by the contemporary environment, and social media use has a significant impact on improving academic achievement and assisting students in resuming their studies. The stressful and depressing environment created by the epidemic, however, has also had a negative impact on students' conduct. Some have become lazy and less motivated to study, which has a negative impact on their academic performance (Mingle & Adams, 2015).

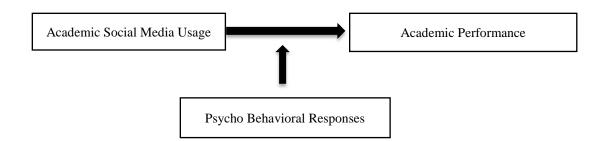


Figure 1: Theoretical Framework

Literature Review

The relationship between academic success and social media use has been the subject of several studies. For example, Acheaw and Larson (2015) found that higher social media use was associated with worse academic performance, mostly due to chatting and video consumption. Rathi et al. (2020) discovered a similar unfavourable effect of social media use on academic performance. Additionally, Rohilla and Sharma (2018) found that nursing students' academic performance suffered due to their regular usage of social media. These research results show that for better academic outcomes, students should strive for a balanced approach to using social media.

The use of social media can potentially improve one's academic performance, according to a 2015 study by Osharive. According to the study, which included 378 students from Logos University, social media can help students share class materials and stay current on class activities, which would ultimately improve their academic performance. It is significant to note that this research excluded academic social media networks in favor of a general focus on social media usage (Osharive, 2015).

Other studies examined the impact of social media on psycho-behavioral responses among students. For instance, Lin et al. (2020) found that social media positively impacted medical students' responses to COVID-19. Abbas et al. (2019) found that the influence of social media on students' learning behaviour and well-being is multifaceted, encompassing both beneficial and detrimental aspects. On one hand, it offers a space for expressing ideas, building awareness, and shaping social identities. Conversely, it can impede productivity, diverting students' attention towards entertainment apps. Hence, maintaining a balanced approach to social media usage is crucial for students to safeguard their academic performance from adverse effects.

Furthermore, numerous research studies have indicated an adverse correlation between the utilization of social media and academic achievement. Beharu (2018) found that psychological factors had a significant negative relationship with academic performance among first-year psychology students. Umar and Idris (2018) found that social media usage significantly negatively influenced secondary school students' psychosocial behaviour and academic performance. Similarly, Jamil et al. (2020) found that the extensive utilisation of social media adversely affected students' academic performance in Islamabad and Rawalpindi. Consequently, students need to exercise caution in their social media usage to prevent it from hampering their academic achievements.

Rationale

The ongoing COVID-19 pandemic has considerably impacted the academic sector worldwide. As a preventive measure, the government implemented a lockdown, which led to a shift from traditional classroom settings to online learning. While online learning provides flexibility and convenience, students face numerous challenges during this transition. Learning from home proved to be tedious and stressful for many students. The lack of a proper home learning environment and numerous interruptions during studies, made it challenging for students to grasp basic concepts and stay motivated. Additionally,

students' psychological and behavioral responses to social media use during online learning can significantly impact their academic performance.

In order to enhance our comprehension of this matter, it is essential to investigate the correlation between university students' use of academic social media, their psychological and behavioral reactions, and their academic achievements amidst the COVID-19 pandemic. A thorough exploration of this connection can unveil strategies to assist students facing these challenging circumstances more effectively.

Methodology

Research Design

Our research delved into the relationship between academic social media usage, psycho-behavioral responses, and academic performance in university students during the COVID-19 pandemic. We employed a quantitative correlation research design to gain valuable insights into the variables at play and their potential impact. By utilizing this approach, we uncovered the interrelationships between the variables and made informed predictions about the study variable without bias or preconceptions (Shaughnessy et al., 2012).

Data Collection

This research study was conducted in Lahore, Pakistan's Punjab province. Data collection began in February 2021 through online and hard-copy questionnaires distributed among university students.

Sample

The present research combined a purposive sampling technique with the snowball sampling strategy. The target sample consisted of university students, of whom only 212 responded to the questionnaire. Upon applying the inclusion-exclusion criteria, only 200 students were selected for the study, aged between 17 and 26 years. The inclusion criteria comprised university students who had taken online classes for more than six months and were in their second to eighth semester studying in universities in Lahore. On the other hand, the exclusion criteria were university students who had not taken online classes for more than six months and students in their first semester studying in universities outside Lahore.

Demographic Characteristics	Range Min Max.	M (SD)	<i>f</i> (%)
Age (in years)	17-26	21.61 (1.25)	
Gender			
Female			113(56.5)
Male			87(43.5)
Birth Order			
Firstborn			41(20.5)
Middle born			82(41.0)
Last born			73(36.5)
The only child			4(2.0)
Family System			
Nuclear			134(67.0)
Joint			66(33.0)
Socioeconomic Status			
Upper class			8(4.0)
Middle class			189(94.5)
Lower class			3(1.5)

Table 1: Descriptive Statistics of Demographic Variables

Program	
BS	140(70.0)
M.Sc.	60(30.0)
Social Media Frequently Used	
WhatsApp	37(18.5)
Google Meet	101(50.5)
Zoom	37(18.5)
LMS	12(6.0)
Other	13(6.5)

Assessment Measure

To gather important information about university students, a comprehensive demographic form was utilized. This form captures data on various factors, including age, gender, birth order, family structure, socioeconomic status, academic major, and more.

The Social Networking Usage Questionnaire was employed to assess academic social media usage. This questionnaire, created by Savita Gupta and Liyaqat Bashir, contains 19 questions. It assesses four areas: socialization, academics, entertainment, and informativeness. A Likert scale with a 1–5 score, a possible score range of 19–95. It had a high reliability of 0.83 (Gupta & Bashir, 2018).

The student learning behavior (SLB) scale and the depression, anxiety, and stress scale (DASS-21) were used to assess psycho-behavioral responses. The SLB scale, created by Jaffar Abbas and colleagues, has 18 items. It has a possible score range of 18-90. It measures behavioral responses. The Likert scale has strong reliability for both the positive component subscale (0.76) and the negative factor subscale (0.82). It goes from 1 = Strongly Disagree to 5 = Strongly Agree (Abbas et al., 2019).

The Lovibond & Lovibond-created DASS-21 scale. It has three subscales, each with seven items. It assesses depression, anxiety, and stress. The scale has a high total reliability of 0.94. The subscale reliability of 0.85 for stress, 0.83 for anxiety, and 0.85 for depression. The scale's range is 0=Did Not Apply To Me to 3=Applied To Me Very Much Or Most Of The Time (Lovibond & Lovibond, 1995).

Last, academic performance was measured through self-reported current GPA of online classes during COVID-19 using a scale developed by Al-Menayes in 2015.

Procedure

For data collection, permission was sought from the registrar of the university. The data were then collected from the students through Google Forms and printed questionnaires that included demographic information, social networking usage, student learning behavior, and depression, anxiety, and stress scales. The questionnaire information sheet clearly outlined the study's nature and aim, and informed consent was obtained from all participating students. Any queries regarding confidentiality and questionnaire solving were addressed. On average, it took students between 10-15 minutes to complete the questionnaire. The data collected were then analyzed statistically, and the study's conclusion was based on this analysis's results.

Ethical Considerations

The current research was conducted with the necessary permissions from the authors of the questionnaires. Additionally, approval was received from the targeted university's registrar. All participants submitted their informed consent after receiving assurances that any information they provided would be kept private. Data were collected from students willing to complete the questionnaire while maintaining anonymity and discretion.

Results

The objective of this research was to examine how academic social media usage, psycho-behavioral responses, and academic performance in university students were linked during the COVID-19 pandemic. In this section, the findings will be presented based on the research hypotheses. The data were analyzed in four primary stages: (i) evaluating the descriptive statistics and reliability coefficients of the study variables, (ii) utilizing the Pearson product-moment correlation to determine the association between the variables, (iii) executing moderation regression analysis to establish whether academic social media usage and psycho-behavioral responses could predict academic performance and whether psycho-behavioral responses play a role in moderating the connection between academic social media usage and academic performance, and (iv) conducting an independent sample t-test to establish any gender disparities between the variables.

Descriptive Statistic and Reliability Analysis of the Study Variable

Descriptive statistics and reliability analysis were performed to examine the mean, standard deviation, minimum-maximum score, and reliability of the study variable.

	-			
Scale	М	SD	Range	Cronbach's a
Social Network Usage Scale	66.27	11.35	36-94	.83
(SNUS)				
Student Learning Behavior	67.03	8.56	35-90	.76
total score				
Positive SLB	34.14	5.90	15-45	.79
Negative SLB	32.89	5.81	16-45	.77
Depression, anxiety and stress	51.04	29.11	0-126	.94
scale (DASS-21) total score				
Stress in DASS	17.95	10.41	0-42	.85
Anxiety in DASS	16.18	10.23	0-42	.83
Depression in DASS	16.91	10.57	0-42	.85
*				

Table 2: Descriptive Statistics of the Study Variables

Note: k= number of items in the scale, M=mean, S.D= standard deviation, α =reliability coefficient

Using SPSS software, the alpha reliability of three scales was computed. These scales encompass the social networking usage scale, the student learning behavior scale, and the depression, anxiety, and stress scale (DASS-21). The social networking usage scale, which consists of 19 items, demonstrates a commendable Cronbach's alpha reliability of 0.83. Meanwhile, the student learning behavior scale, comprising 18 items and featuring positive and negative factor subscales, exhibits a Cronbach's alpha reliability of 0.76. The positive factor subscales, comprising 9 items, display a Cronbach's alpha reliability of 0.79, while the negative factor subscales, also containing 9 items, show a Cronbach's alpha reliability of 0.77. Moreover, the Depression, Anxiety, and Stress Scale (DASS-21), with its 21 items, proves to be highly reliable, boasting a Cronbach's alpha reliability of 0.94 and encompassing three subscales: stress, anxiety, and depression. The stress subscale, also consisting of 7 items, demonstrates a robust Cronbach's alpha reliability of 0.83. Similarly, the depression subscale exhibits a solid reliability, with a Cronbach's alpha of 0.85. Overall, these reliability statistics indicate that all the scales are internally consistent.

Pearson Product Moment Correlation Analysis of the Study Variable

Pearson product-moment correlation analysis was run to determine the relationship among the study variables.

Variable	М	S.D	1	2	3	4	5	6	7	8
SNUS	66.27	11.34								
Total SLB	67.03	8.56	.40***							
Positive SLB	34.14	5.90	.44***	.74***	_					
Negative SLB	32.89	5.81	.14*	.73***	.07					
Total DASS	51.04	29.11	.00	.15*	06	.27***				
Stress in DASS	17.95	10.41	01	.17*	04	.29***	.94***			
Anxiety in DASS	16.18	10.23	.03	.12	04	.22**	.93***	.80***		
Depressio n in DASS	16.91	10.57	01	.12	08	.26***	.94***	.82***	.79***	
AP	3.39	.33	20**	05	06	02	03	.03	07	-0.4

Table 3: Descriptive Statistics and Pearson Product Moment Correlation for Study Variables

Note: *p < .05; **p < .01; ***p < .001; SNUS = Social Networking Usage Scale, SLB = Student Learning Behavior, DASS = Depression, Anxiety and Stress Scale, AP = Academic Performance

The Pearson product-moment correlation analysis conducted in Table 2 exhibits a significant correlation among the study variables. Specifically, the results show that increased academic social media usage has a detrimental impact ($r = -.20^{***}$) on academic performance, indicating that higher utilization of academic social media platforms leads to lower academic outcomes. Conversely, higher academic social media usage positively correlates with student learning behavior ($r = .40^{***}$), suggesting that increased usage of academic social media enhances student learning behavior. The study also reveals that academic social media usage does not significantly impact psychological responses (r = .00), implying that academic social media usage is not a source of psychological responses and academic performance (r = -.05) or between psychological responses and academic performance (r = -.05) or between psychological responses and academic performance (r = -.05). Results presented in Table 3, that there is a significant relationship between academic social media usage, psycho-behavioral responses, and academic performance of university students during COVID-19 is accepted.

Moderation Regression Analysis

It was hypothesized that academic social media usage and psycho-behavioral responses are likely to predict academic performance and that psycho-behavioral responses are likely to work as moderators between academic social media usage and academic performance.

Variables	Model 1			Model 2	Model 2			
	В	β	S.E	В	β	S.E		
Constant	3.39***		.02	3.41***		.02		
SNUS	07**	22**	.03	08**	23**	.03		
SLB	.01	.04	.03	.01	.04	.03		
DASS	01	03	.02	01	04	.02		
SNUS × SLB				03	10	.02		
SNUS×				.04	.13	.02		
DASS								
\mathbf{R}^2	.04			.06				
ΔR^2				.02				

Table 4: Moderation Regression Analysis

Note: *N*=200, ****p* <.001, ***p*<.05

Table 4 presents the results of a moderation regression analysis investigating the connection between academic social media usage, psycho-behavioral responses, and academic performance among university students during the COVID-19 pandemic. In Model 1, the R-squared value of 0.04 indicates that the predictors accounted for 4% of the variance in the outcome, with F (3, 198) = 2.91, p < 0.05. Notably, it was found that academic social media usage had a negative impact on academic performance.

Moving on to Model 2, the R-squared value of 0.06 indicates that the predictors explained 6% of the variance in the outcomes, with F (2, 194) = 2.46, p < 0.05. The Δ R-squared value of 0.02 signifies a 2% change in the variance between Model 1 and Model 2, with Δ F = 1.75, p > 0.05. Interestingly, the results indicate that psycho-behavioral responses did not serve as a moderating factor in the relationship between academic social media usage and academic performance among university students during the COVID-19 pandemic.

Independent samples t test Analysis of the Study Variables

We proposed the hypothesis that there may exist a gender disparity in the utilization of academic social media, psycho-behavioral reactions, and academic achievements. An independent sample t-test analysis was conducted to examine this gender distinction in the study variables. The outcomes of this analysis are presented in Table 5.

Variable	Female (N=113)		Male (N=87)			р	Cohen's
	M	S.D	M	S.D			
SNUS	65.89	11.73	66.76	10.89	54	.59	0.00
Total SLB	67.37	9.22	66.59	7.66	.64	.52	0.32
Positive SLB	34.28	5.86	33.95	5.98	.39	.70	0.06
Total DASS	54.99	29.94	45.91	27.31	2.21	.03	0.31
Stress in DASS	19.70	10.47	15.68	9.93	2.75	.01	0.39
Anxiety in DASS	17.43	10.59	14.55	9.56	1.99	.05	0.29
Depression in DAS	17.86	11.02	15.68	9.89	1.45	.15	0.21
Academic Performance	3.46	.31	3.31	.33	3.71	.00	0.47

Table 5: Independent sample t-test indicating the difference between males and females in academic social media usage, psycho-behavioral responses, and academic performance

Note: *M*= *Mean; S*.*D*= *Standard Deviation*

According to the research findings, there was a notable gender gap in the psychological responses of students during the COVID-19 pandemic. The study used the DASS total scale to measure the responses and found that females (M=54.99, SD=29.94) experienced a higher level of psychological response than their male counterparts (M=45.91, SD=27.31) (t= 2.21, df= 198, p=.03). Furthermore, female students demonstrated higher levels of stress (M=19.70, SD=10.47) than their male counterparts (M=15.68, SD=9.93) during the pandemic, indicating a significant difference (t= 2.75, df= 198, p=.01). Similarly, the research results also showed a significant difference in anxiety levels (t= 1.99, df= 198, p=.05), with female students (M=17.43, SD=.31) experiencing more anxiety than male students (M=14.55, SD=9.56) during the pandemic. Finally, the study revealed that female students (M=3.46, SD=.31) outperformed male students (M=3.31, SD=.33) in academic performance during the COVID-19 pandemic, indicating a significant gender difference (t= 3.71, df= 198, p=.00).

Discussion

This study sought to determine the relationship between social media use, psycho-behavioral responses, and demographic details like gender and family structure and how well university students performed academically during the COVID-19 epidemic. According to the research, academic social media use, psycho-behavioral responses, and demographic indicators can all be used to predict academic performance because they all show strong relationships. Furthermore, the study anticipated observing gender disparities within these variables.

Numerous investigations have sought to assess the influence of social media on the psychosocial behavior and academic achievements of students. Umar and Idris, in their study of 306 SSII students, observed that social media usage had a notable adverse effect on psychosocial behavior. Conversely, contemporary research outcomes suggest that when it comes to university students, academic social media usage positively impacts their behavioral responses while negatively affecting academic performance. Acheaw and Larson's extensive study of 1508 Ghanaian students corroborates these findings, indicating a negative impact of social media on academic performance (Acheaw and Larson & 2015). Likewise, Alsaif's study involving 40 students from Cardiff Metropolitan University aligns with current research by revealing a positive correlation between academic social media use, behavioral responses, and academic performance among university students. These investigations illuminate the intricate consequences of social media on students, underlying both its potential advantages and disadvantages. Further research is imperative to gain a comprehensive understanding of social media's effects on academic performance and psychosocial behavior, as well as to formulate strategies that assist students in utilizing social media safely and productively (Alsaif, 2017).

In a recent investigation conducted by Abbas et al. (2019, p. 1683), the objective was to examine how social media influences the learning behavior of students in Pakistan. This study comprised 831 participants and proposed the hypothesis that social media utilization influences learning behavior. The results indicated that social media use can have both favorable and adverse effects on the learning behavior and well-being of Pakistani students. Surprisingly, while the use of academic-oriented social media platforms displayed a positive correlation with behavioral responses, it had a detrimental impact on academic performance, contradicting the findings of Osharive (2015). Osharive's research initially posited that social media use had no bearing on academic performance, but it discovered a significant positive association between social media usage and academic achievements among 378 students at Logos University.

Beharu (2018) conducted an additional investigation with the objective of examining the connection between psychological factors and the academic achievements of first-year psychology students at Dire Dawa University. The study put forth the hypothesis that psychological factors play a role in academic performance and selected a sample of 16 students using purposive sampling. The results uncovered a notable adverse correlation between psychological factors and academic performance, which contrasts with the present research suggesting that psycho-behavioral responses do not serve as predictors for university students' academic performance, a perspective supported by the literature reviews of Acheaw and Larson (2015) and Umar and Idris (2018).

Using an independent sample t-test, the study also looked at gender differences in both psychological responses and performance in university students. The findings showed that while female students performed better academically than their male counterparts, they also suffered higher levels of stress and anxiety. These results are consistent with those reached by Mingle and Adams, whose study found that while male students' grades declined as a result of using social media, female students performed better on tests (Mingle & Adams, 2015). The research by Abbas et al. (2019), which showed that females displayed more psycho-behavioral responses than males, further supported the current findings. Collectively, these studies provide insightful information about how social media and psychological

aspects affect university students' academic performance, highlighting the need for more research in this area.

Conclusion

The purpose of this study was to look at the relationship between university students' academic social media participation, psycho-behavioral responses, and academic success. The findings showed that although academic social media use negatively impacted students' academic achievement, it favorably influenced their responses to learning behavior. However, there was no discernible connection between psychological responses and academic social media use. The study also made the case that academic social media use could be a useful indicator of university students' achievement in the classroom. The results also highlighted a significant gender gap in university students' behavioral responses, including stress and anxiety, as well as academic performance, particularly in the context of the COVID-19 epidemic. In conclusion, this study offers important new understandings into the complex interactions between academic social media use, psycho-behavioral responses, and academic performance. The ability to maximize the positive effects of academic social media while limiting any potential detrimental effects on academic success can be gained from this insight, which can assist educators and policymakers in developing effective policies.

Future Implications

Students who want to use social media platforms for academic reasons can benefit greatly from the empirical data offered in this study. The outcomes of this study can also help educators comprehend problems with student performance on a deeper level. Recognizing that teachers and administrators have a crucial role in understanding students' psychological and behavioural responses and can so greatly contribute to the improvement of academic performance is essential.

Suggestions

- Data can be gathered from many institutions (including both private and public universities) and compared between them.
- The results on Pakistani students can be generalized using data from all of the provinces of Pakistan.

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Conflict of Interest

Authors declared no conflict of interest.

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