Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

Social Media Use and University Students' Self-Reported Learning Outcomes in Mogadishu Somalia

Fuad Ali Osman

fahadazin08@gmail.com

Somalia National University

Mohamed Ahmed iman

Somalia National University

LIBAN OMAR HASSAN

Somalia National University

Ahmed Ismail Omar

Mogadishu University

Research Article

Keywords: Social media use, self-reported learning outcomes, university students, academic use, communication and collaboration

Posted Date: November 25th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11485921/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License.
Read Full License

Additional Declarations: No competing interests reported.

Abstract

This study examined the associations between social media use and university students' self-reported learning outcomes in Mogadishu, Somalia. A quantitative cross-sectional design was used, and data were collected through a structured questionnaire completed by 180 students from three universities. The study examined three dimensions of social media use: frequency of use, academic use, and communication and collaboration. Data were analyzed using SPSS, including descriptive statistics, reliability analysis, Pearson correlation, and multiple linear regression. Academic use of social media ($\beta = 0.307$, $p < .001$) and communication and collaboration ($\beta = 0.343$, $p < .001$) were positively associated with self-reported learning outcomes in the regression model. Frequency of social media use was not a statistically significant predictor ($\beta = 0.107$, $p = .089$) after the other variables were controlled. Together, the three predictors explained 32.1% of the variance in reported learning outcomes. The findings suggest that the educational purpose and collaborative use of social media are more closely associated with students' reported learning outcomes than frequency of use alone. Because the study was cross-sectional and relied on self-reported data, the findings should be interpreted as associations rather than evidence of causation.

1. Introduction

Social Media refers to a group of online programs and websites that were developed with Web 2.0 developments which emerged from user participation and user-generated content (Zarei et al., 2022). The use of Social Media has been rapidly increasing in the modern era due to the quick development of technology and the easy availability to mobile phones (Salari et al., 2025). By February 2025, there were 5.24 billion Social Media users globally, according to STATISTA. With hundreds of millions of active users, the most well-known Social Media platforms include Facebook, YouTube, WhatsApp, Instagram, TikTok, and WeChat. Social Media has a major impact on people's lives and has been integrated into the field of education due to its massive user base (Wang et al., 2025). Social Media is used by millions of people globally and is almost everywhere (Khalaf et al., 2025). Students at university represent a large percentage of Social Media users, They spend many hours a day on Social Media and are among the most active audiences (Salari et al., 2025). Social Media has an impact on students' personal and academic lives. Students use Social Media to enhance their academic performance (S. Amjad et al., 2022). Students' performance may be affected by Social Media in both positive and negative ways (Salari et al., 2025). But, these networks had more negative consequences than beneficial ones. Through communication with groups and other educational systems, social networks give students several chances to enhance their learning and have access to the most recent knowledge. By lowering barriers to communication and group interaction, promoting active and social learning, fostering self-study, boosting learning motivation, and fostering more interaction between students and teachers, social networks can help students learn and improve their academic performance (Salari et al., 2025). Despite its numerous advantages, improper management of these networks might have negative impacts on students (Salari et al., 2025). Students' lives are seriously damaged by social network addiction, which is characterized by excessive use and a lack of self-control (Salari et al., 2025). According to (Jeilani,

2024), the current generation of college students is also aware that Social Media has an effect on students' mental health, which refers to their emotional technologies. This promotes improved social and psychological wellbeing. One of the most significant effects of Social Media addiction on students is a decline in their academic performance. Students' tendency to spend a lot of time on Social Media for non-educational purposes distracts them from the classroom and can lower their level of focus, which can have a detrimental impact on their academic performance (Salari et al., 2025). So the effect of Social Media on students' learning outcome may depend on how much, why and how students use it.

Additionally, the Somali evidence is conflicting. In a study of three Universities in Mogadishu, (Jeilani, 2024) discovered a considerable relationship between teacher-student interaction and specific forms of Social Media use, but no significant relationship for peer cooperation. Another study by (Shire, 2024) on studying Green Hope University, reported a positive relationship between Facebook/TikTok use and academic achievement while warning about the distraction of excessive use. Although some studies concentrated on particular platforms, specific universities, discipline, addiction, and inappropriate usage of Social Media. However, my research will concentrate on the wider effects of Social Media use on students' learning outcomes, taking into account various usage patterns within a particular university setting.

Students at universities use social media for learning, entertainment, and communication. While non-educational use might compete with study time and attention, academic use might offer access to educational resources and collaborative opportunities. Although previous studies have examined social media and academic outcomes, evidence remains limited on how distinct dimensions of use—frequency, academic use, and communication and collaboration—are associated with university students' self-reported learning outcomes in Somalia. Local studies that have already been conducted have focused on specific platforms, organizations, or types of interaction; however, in the Mogadishu context, the combined associations of these three dimensions have not gotten as much attention.

Therefore, this study looks at the associations between these aspects of social media use and students' self-reported learning outcomes at three universities in Mogadishu, Somalia. In particular, it explains how students use social media and examines how their reported learning outcomes relate to frequency, academic use, communication, and collaboration.

This study offers context-specific evidence regarding the relationship between various social media usage patterns and university students' self-reported learning outcomes in Mogadishu, Somalia, by separating usage frequency from academic use, communication, and collaboration. The findings may be useful to researchers, instructors, university administrators, and students.

2. Literature review and hypotheses development

2.1 Theoretical framework

This study integrates two theories to explain how student's Social Media use effects learning outcome and these theories are Uses and Gratifications Theory (U&G) and Social Constructivism (Vygotsky, Piaget). Uses and Gratifications theory developed by Katz, Blumler, and Gurevitch's (1973) explains why people actively choose and use specific media to meet their needs and gain desired benefits. According to the theory, media users are active participants who select media based on their particular goals, including social interaction, entertainment, communication, and information seeking. Uses and Gratifications theory offers a theoretical foundation for comprehending students' Social Media usage frequency in the context of this study, since students may regularly use Social Media to support their academic endeavors, communicate with peers, and obtain information. The Uses and Gratifications perspective has been applied to university students' Social Media use in recent research, which has shown that students use Social Media to meet a variety of personal, social, educational, and informational needs.

Social Constructivist Theory especially connected to Vygotsky (1978), highlights that learning happens via social interaction, communication, teamwork, and knowledge sharing. By interacting with peers, teachers, and their learning environment, students actively construct knowledge. As a result, this theory is especially relevant to the current study's use of Social Media for academic purposes as well as for communication and cooperation.

(Alismaiel & Cifuentes-faura, 2022) using constructivism theory to examine Social Media and online learning among 480 high school students, found that using Social Media for student engagement and collaborative learning directly improves students' interactions with teachers and peers. Similarly (Liu et al., 2022) discovered that students' learning performance was significantly correlated with Social Media-based collaborative learning, whereas Social Media collaboration was significantly correlated with active learning and student interaction.

Additionally, empirical research supports the relationship between students' learning outcomes and the use of Social Media in the classroom. (Sabah & Altalbe, 2022) linked students' perceived academic performance to their use of educational Social Media. while (Hamadi et al., 2022) discovered that using Social Media as a cooperative learning tool enhanced students' learning. These findings support the Social Constructivist theory, which holds that active student participation in communication, teamwork, interaction, and knowledge-sharing activities can improve learning. Together, these theories offer a framework for investigating the potential effects of various Social Media platforms on students' academic performance. While Social Constructivist Theory explains how academic use, communication, and collaboration through Social Media can facilitate learning and knowledge construction, Uses and Gratifications Theory explains why students use Social Media and how often they engage with it.

Thus, the current study uses these theories to investigate three aspects of Social Media use: frequency of use, academic use, and communication and collaboration through Social Media, as well as their connection to students' learning outcomes.

2.2 Conceptual views

2.1.1 frequency of Social Media use and students' learning outcomes.

Frequency refers to how frequently people use or access Social Media, while the amount of time spent on Social Media is duration (Huang, 2018). The main operationalization of Social Media (SM) use have included frequency of use or passive versus active use. (Tuck & Thompson, 2024) used a list of seven SNSs—Facebook, Instagram, Twitter, Snapchat, Reddit, Tumblr, and LinkedIn—to assess participants' weekly usage frequency. In a typical week during the specified period, participants indicated how often they used each of the seven sites thereby measuring their weekly and frequency of use. An 8-point Likert scale, ranging from 1 (never) to 8 (7 + times per day), was created by the experimenter to score these items. The total weekly frequency scores ranged from 7 to 56 due to the sum of the values across the seven SNSs. there is a direct and indirect negative correlation between increased use of social networking sites and academic performance due to lower student engagement. Additionally, (Tafesse, 2022) also founds that academic performance is positively correlated with social networking site usage up to 88.87 minutes per day; after that, academic performance is negatively correlated with social networking site use.

Therefore, the frequency of Social Media use is considered an important dimension of its relationship with students' learning outcome.

H1: Frequency of social media use is significantly associated with students' self-reported learning outcomes.

2.1.2 academic use of Social Media on students' learning outcomes.

Academic use of Social Media describes how educators and students intentionally use social networking sites to facilitate teaching and learning activities, such as accessing and sharing educational content, interacting with teachers and peers, and taking part in group projects and other learning activities (Dash et al., 2022). When Social Media is used intentionally, research on academic or educational uses in higher education generally demonstrates positive learning outcomes. Social Media can be used academically as learning tool to improve communication, collaboration, sharing of information (Perez et al., 2023). (Jeilani, 2024) found that Social Media use academically presents fresh chances to support students' educational learning. For example, Social Media can be used to oversee class activities, offer resources and information, and increase student motivation and engagement in online learning communities through interaction and teamwork. According to recent empirical research, Social Media use for academic purposes can improve students' learning outcomes, especially when it encourages participation and teamwork. (Liu et al., 2022) conducted a survey involving 583 students from various universities and The results indicate that perceived benefits, active learning, and interaction among students are significantly related to Social Media collaboration. Likewise (Chugh & Ruhi, 2018) review that Numerous advantages of using Facebook for education have been found, including

enhanced engagement, better performance, teacher-student and student-student interaction, and learning convenience. (A. I. Amjad et al., 2024) reports that Social Media has an impact on students' personal and academic lives. Students utilize Social Media to enhance their academic performance. Social Media can be used by both educators and learners to facilitate and enhance the teaching and learning process. (Sabah & Altalbe, 2022) Educators have sought to integrate these practices into classroom teaching to maximize the use of Social Media technologies and enhance students' critical thinking skills while using Social Media platforms.

However, there isn't always a positive correlation between students' learning outcomes and their use of Social Media for academic purposes. (Perez et al., 2023) emphasized that Social Media use generally improves students' learning. However, this isn't always related to the technologies themselves, rather, it's related to how they're used and how specific pedagogies and/or instructional strategies are created.

Therefore, this study considers academic use as a significant aspect of Social Media use when examining the relationship between Social Media use and students' learning outcomes.

H2: Academic use of social media is significantly associated with students' self-reported learning outcomes.

2.1.3 communication and collaboration through Social Media on students' learning outcomes.

Since students are urged to participate in peer-to-peer discussion, exchange resources, and develop their communication abilities, according to this viewpoint, Social Media can offer a platform for combining social and educational activities (Perez et al., 2023). Social Media-based "collaborative learning" is an approach that encourages learning through teamwork and social interactions among students (Liu et al., 2022). According to (Hamadi et al., 2022) Students used LinkedIn's numerous features and options to interact, communicate, collaborate, and share ideas and assignment-related information with their peers and could speak with their teachers, who had joined the groups. According to (Salari et al., 2025), Twitter allowed teachers to establish a social presence with their students, provided a means of communication for teachers to get in touch with their students, and promoted online interaction among participants, all of which enhanced in-person instruction. (Sabah & Altalbe, 2022) also found that increased Social Media use promoted team cohesion, information exchange, and team effectiveness and how Social Media usage in learning communities have a significant positive impact team learning performance. (Koul & Jasrotia, 2025) reported that incorporating modern Social Media tools into academic settings encourages participation, communication, and teamwork in online learning environments to promote discussion-oriented learning and cocreation. (Ali, 2025) also indicated that student engagement and academic performance are positively and significantly impacted by Social Media learning communities, Additionally, it is evident that student engagement significantly improves academic performance.

However, the effect of communication and collaboration through Social Media may depend on how are structured and used for educational purpose. (Bouton et al., 2021) indicated that knowledge sharing

doesn't mean a better GPA. Similarly (Jeilani, 2024) found that Peer collaboration and Social Media use were not significant associated with students' academic achievement, Whereas interactions with their teachers showed a stronger relationship with academic achievement.

H3: Communication and collaboration through social media are significantly associated with students' self-reported learning outcomes.

The conceptual framework illustrates the hypothesized associations between frequency of social media use, academic use of social media, communication and collaboration through social media, and students' self-reported learning outcomes.

3. Methods and Materials

3.1 Research Design

This study investigated the associations between students' self-reported learning outcomes and social media use in Mogadishu, Somalia, using a quantitative cross-sectional research design. It was suitable to use a quantitative research approach. because the study collected numerical data and statistically examined the relationships between social media use and students' self-reported learning outcomes. Since data was collected from respondents all at once, a cross-sectional research design was used. Three universities in Mogadishu—Jamhuriya University, Somali National University, and Mogadishu University—were involved in the study. The target population is made up of the university students enrolled in these institutions.

A sample of 200 students was selected for this study. A priori power analysis for multiple linear regression with three predictors, a medium effect size ($f^2 = 0.15$), a significance level of 0.05, and statistical power of 0.80 indicated that at least 77 respondents are needed for the study. Thus, it is evident that the intended sample size of 200 students exceeded the minimum required number of participants for examining the relationships between the variables under investigation. The study employed a non-probability sampling, whereby students who met the inclusion criteria and were available to the researcher were recruited for the study. This method was deemed appropriate since the researcher does not have access to a comprehensive list of all students at the selected universities. Data was collected using structured questionnaire designed based on the objectives of the study and the conceptual framework. The questionnaire measured the frequency of Social Media use, academic use of Social Media, communication and collaboration through Social Media, and students' learning outcomes. The questionnaire was distributed via Google forms to enable easy collection of responses from the selected students in the identified universities. The questionnaire used a five-point scale to indicate the level of agreement for each item. The five-point scale was used to capture the frequency of Social Media use ranging from 1 for Never to 5 for Very Often. while the other study variables were measured using a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. A total of 200 questionnaire forms were handed out to university students, and 180 usable responses were recorded

from them. This is equivalent to a 90% response rate. Participants of this study were selected from three different universities located in Mogadishu, Somalia. respondents' demographics included gender, age, university, year of study, faculty. A total of 180 respondents participated in this study. Regarding gender, the majority were male (n = 97, 53.9%), while females constituted 46.1% (n = 83). In terms of age, the largest group was aged 21–23 years (n = 70, 38.9%), followed by those aged 24–26 years (n = 55, 30.6%), 18–20 years (n = 29, 16.1%), and 27 years or above (n = 26, 14.4%). Concerning university affiliation, Somali National University (SNU) had the highest representation (n = 64, 35.6%), while Mogadishu University and Jamhuriya University each accounted for 32.2% (n = 58 each). With respect to year of study, the highest proportion was in year (n = 37, 20.6%), second year (n = 17, 9.4%), and first year (n = 9, 5.0%).

Regarding faculty/college, the largest group was from Economic and Management (n = 52, 28.9%), followed by IT/Computer Science (n = 38, 21.1%), Engineer (n = 27, 15.0%), Social Sciences (n = 23, 12.8%), Health Sciences (n = 18, 10.0%), Education (n = 12, 6.7%), and Medicine (n = 5, 2. 8%). The remaining categories Accounting, Political, Public Health, Law, and Agriculture, each had only 1 respondent (0.6% each).

3.2 Variable and Measurements

This study examined four variables: frequency of Social Media use, academic use of Social Media, communication and collaboration through Social Media as independent variables, and students' learning outcomes as the dependent variable. The dimensions are then processed. five items (FSU1, FUS2, FSU3, FSU4, and FSU5) are related to the frequency of Social Media use. Eight items were used for the academic use of Social Media (AUS1, AUS2, AUS3, AUS4, AUS5, AUS6, AUS7, AUS8). Nine items were used for communication and collaboration through Social Media (CC1, CC2, CC3, CC4, CC5, CC6, CC7, CC8, and CC9). Finally, ten items are used for students' learning outcomes (SLO1, SLO2, SLO3, SLO4, SLO5, SLO6, SLO7, SLO8, SLO9, SLO10).

3.3 Data Analysis Techniques and Procedure

The study used SPSS *to* investigate the hypotheses. The reliability and descriptive statistics of the study was evaluated first *(*Table 1), and then Pearson correlation was examined (Table 2).

3.4 Validity and Reliability Test

The study evaluated the internal consistency reliability of the instruments by computing Cronbach's alpha coefficients for each scale; the result showed that all coefficients met the recommended reliability criterion of 0.70 or higher. Furthermore, the study assessed the descriptive statistics of the study variables, all of which were satisfactory. As shown in Table 1.

Table 1
reliability descriptive statistics of the study variables

Variable	No. of items	Cronbach's Alpha	Mean
Frequency of Social Media Use	5	0.730	3.420
Academic Use of Social Media	8	0.734	2.417
Communication and Collaboration	9	0.783	2.486
Students' Learning Outcomes	10	0.824	2.729

4. Data analysis and results

4.1 **Pearson correlation analysis**

Table 2: Correlations between frequency of Social Media use and student's learning outcome

Correlations			
		FSU	SLO
FSU	Pearson Correlation	1	.192
	Sig. (2-tailed)		.010
	N	180	180
SLO	Pearson Correlation	.192	1
	Sig. (2-tailed)	.010	
	N	180	180

FSU and SLO's Pearson correlation analysis is shown in Table 2. The findings show that FSU and SLO have a statistically significant positive connection (r = 0.192, p = 0.010, N = 180). This suggests that an increase in SLO is correlated with an increase in FSU. The link is statistically significant at the 1% level since the p-value (0.010) is equivalent to the 0.01 significance level

Table 3: Correlations between academic use of Social Media and student's learning outcome

Correlations			
		AUS	SLO
AUS	Pearson Correlation	1	.449
	Sig. (2-tailed)		<0.001
	N	180	180
SLO	Pearson Correlation	.449	1
	Sig. (2-tailed)	<0.001	
	N	180	180

With a correlation coefficient of r = 0.449, Table 3 showed a moderate positive between students' learning outcomes (SLO) and academic use of Social Media (AUS). With 180 valid responses, the connection was statistically significant (p < 0.001). This suggests that students who used Social Media more for academic purposes also tended to report better learning outcomes.

Table 4: Correlations between communication and collaboration through Social Media and student's learning outcome.

Correlations			
		CC	SLO
CC	Pearson Correlation	1	0.474
	Sig. (2-tailed)		<0.001
	N	180	180
SLO	Pearson Correlation	0.474	1
	Sig. (2-tailed)	<0.001	
	N	180	180

Table 4. showed a moderate positive relationship between communication and collaboration through Social Media (CC) and students' learning outcomes (SLO), Table 5 demonstrated a moderate positive correlation (r = 0.474) between communication and collaboration through Social Media (CC) and students' learning outcomes (SLO). 180 valid responses indicated that the relationship was statistically significant (p < 0.001). This result suggests that students' reported learning outcomes are linked to higher levels of Social Media collaboration and communication.

4.2 **Multiple regression analysis**

Table 5: Multiple Linear Regression Analysis of Factors Predicting Students' Learning Outcomes

Independent Variable	B	SE	β	t	p
Constant	3.296	3.474	—	.949	.344
Frequency of Social Media Use (FSU)	1.583	.927	.107	1.708	.089
Academic Use of Social Media (AUS)	.438	.096	.307	4.573	<.001
Communication and Collaboration (CC)	.423	.083	.343	5.079	<.001

Table 5 Multiple linear regression. Results show that Academic Use of Social Media (AUS) is a significant positive predictor of SLO (B = 0.438, β = 0.307, t = 4.573, p < .001). This means that, when other variables remain constant, a one-unit increase in AUS results in a 0.438-unit increase in SLO. In a similar vein, Communication and Collaboration (CC) is a statistically significant positive predictor of SLO (B = 0.423, β = 0.343, t = 5.079, p < .001), with CC having the highest unique contribution among the predictors (β = 0.343).

However, Frequency of Social Media Use (FSU) was not a statistically significant predictor of SLO (B = 1.583, β = 0.107, t = 1.708, p = 0.089). The coefficient is positive, but the p-value is greater than the 0.05 level of significance, therefore FSU does not significantly impact SLO when AUS and CC are controlled. The constant is also not statistically significant (B = 3.296, t = 0.949, p =.344).

Table 6:Model statistics:

R	R^2	Adjusted R^2	Std. Error
.567	.321	.310	8.466

The model summary statistics are reported in table 6. The multiple correlation coefficient (R = 0.567) shows a moderate positive relationship between the combination of the three predictors and SLO. Based on R^2 value of 0.321, it is clear that the extent frequency of Social Media use, academic use, and communication and collaboration together account for 32.1% of the difference in the performance of students, while the rest of the 67.9% could be due to some other variables. The corrected R2 (0.310) indicates that the model explains 31% of the variance in SLO even when the number of predictors is controlled. The standard error of the estimate (8.466) is moderate prediction error.

4.1 summary of hypotheses testing.

Table 7:hypotheses testing.

Hypothesis	Result	Decision
H1: FSU significantly affects SLO	β = .107, p = .089	**Not Supported**
H2: AUS significantly affects SLO	β = .307, p < .001	**Supported**
H3: CC significantly affects SLO	β = .343, p < .001	**Supported**

4.3.1 **H1: Frequency of Social Media Use and Students' Learning Outcomes**

The results of this study indicated that the frequency of social media use (FSU) was positively but statistically insignificantly related to students' self-reported learning outcomes (SLO) (β = 0.107, p = 0.089). It can be concluded that the results do not support H1 as the p-value was greater than 0.05, and as such. The implication is that FSU was not a significant predictor of SLO when other variables in the model were controlled.

4.3.2 **H2: Academic Use of Social Media and Students' Learning Outcomes**

The results of the analysis revealed that there was a positive association between the academic use of Social Media (AUS) and students' self-reported learning outcomes (SLO) (β = 0.307, p < 0.001). The p-value of the model was determined to be less than the threshold of significance (0.05) which supported the results of the analysis; hence, H2 was supported. This can be interpreted as evidence that a higher academic use of Social Media leads to higher students' self-reported learning outcomes, controlling for the effect of the other predictors in the model.

4.3.3 **H3: Communication and Collaboration and Students' Learning Outcomes**

The results indicate that communication and collaboration through Social Media (CC) was positively and statistically significantly related to students' self-reported learning outcomes (SLO) (β = 0.343, p < 0.001). Since the p-value is smaller than the significance level of 0.05, H3 is supported. CC also had the largest standardized beta coefficient of the three predictors, indicating that it had the strongest relative association with students' self-reported learning outcomes in the model.

5. Discussion of the results

The results indicate that the associations between social media use and students' self-reported learning outcomes differ according to the dimension of use. In the regression model, academic use of social media and communication and collaboration were positively and significantly associated with reported learning outcomes, whereas frequency of use was not a statistically significant predictor after the other variables were controlled. Because the study used a cross-sectional design and self-reported measures, these results do not establish causal effects.

Frequency of social media use had a small positive bivariate correlation with students' self-reported learning outcomes (r = .192, p = .010). However, it was not a statistically significant predictor in the

multiple regression model (β = .107, p = .089). Therefore, H1 was not supported. This result indicates that frequency of use was not independently associated with reported learning outcomes after academic use and communication and collaboration were controlled. It is consistent with the possibility that the relationship between social media use and academic outcomes depends on the purpose and pattern of use (Tafesse, 2022).

Academic use of social media was positively and significantly associated with students' self-reported learning outcomes in the regression model (β = .307, p < .001). Therefore, H2 was supported. Students who reported using social media for academic purposes—such as accessing learning materials, obtaining academic information, discussing coursework, and communicating with classmates—also tended to report better learning outcomes, after controlling for the other predictors. This finding is consistent with previous research (Dash et al., 2022), (Liu et al., 2022), (Perez et al., 2023).

Communication and collaboration had the largest standardized coefficient among the three predictors and was positively associated with students' self-reported learning outcomes (β = .343, p < .001). Therefore, H3 was supported. This association suggests that academic communication, sharing learning resources, discussing academic topics, exchanging ideas, and collaborating with other students co-occur with more positive reported learning outcomes. This finding is consistent with (Liu et al., 2022), (Hamadi et al., 2022).

The result should be interpreted as an association rather than proof that communication and collaboration cause improved learning outcomes. Other factors not measured in this study may also contribute to students' reported learning outcomes.

Together, the three independent variables explained 32.1% of the variance in students' self-reported learning outcomes (R^2 = .321). Academic use and communication and collaboration were statistically significant predictors, while frequency of use was not significant in the adjusted model. The remaining variance may be associated with other factors not examined in this study.

The findings are broadly consistent with the Uses and Gratifications Theory and Social Constructivist Theory: students' purposes for using social media and their opportunities for interaction and knowledge sharing may be relevant to their learning experiences. However, the cross-sectional results do not establish causality or independently confirm either theory.

6. Limitations and Implications

This research has a number of limitations that need to be considered in analyzing its findings. Firstly, it is impossible to draw any conclusions regarding causality because the cross-sectional approach was employed. Second, recall and response biases may affect the information gathered via surveys. Thirdly, the sample was chosen using non-probability sampling from three Mogadishu universities. The generalizability of the findings to the entire population of university students in Somalia is thus limited. To get more proof of a relationship between social media use and learning outcomes, future studies

should take into account longitudinal or experimental methods, employ more diverse samples from various regions of Somalia, and employ objective measures of academic achievement.

The results have applications for universities, instructors, and students. Teachers and universities can encourage students to use social media for academic purposes, such as sharing study materials, discussing assignments, interacting with peers, and working together on group projects. Universities don't need to concentrate on reducing the amount of time students spend on social media. Rather, it is advised to promote responsible use of social media for academic purposes.

7. Conclusion

This study found that academic use of social media and communication and collaboration were positively associated with university students' self-reported learning outcomes in Mogadishu, Somalia. Frequency of use was positively correlated with reported learning outcomes, but was not a statistically significant predictor when academic use and communication and collaboration were controlled. The three predictors, taken together, accounted for 32.1% of the variance in reported learning outcomes. The findings indicate that the purpose and collaborative nature of social media use may be more informative than frequency alone for students' reported learning experiences. The results should be interpreted with caution due to non-probability sampling, reliance on self-reported data, and the cross-sectional nature of the study, and should not be taken as evidence of causal effects.

Declarations

Ethical approval

Ethical approval for this study was obtained from The Somali National University Faculty of Economics and Management Science Research Committee approved this study (Approval No. FEMS0003). The study was carried out in compliance with the relevant institutional ethical rules and guidelines.

Consent to participate

Informed consent was obtained from all participants before their participation in the study.

Consent to publish

All participants provided informed consent for the publication of the research findings.

Author Contribution

Credit: Fuad Ali Osman: Writing – original draft, review & editing, conceptualization, project administration, supervision, Mohamed Ahmed Iman: data curation, methodology, Writing – original draft.

Liibaan Omar Hassan: methodology, data collection, formal analysis. Ahmed Ismail Omar: formal analysis, validation, review & editing

Data Availability

Availability of data and materialsThe data are available from the corresponding author upon reasonable request.

References

1. Ali H. (2025). ACADEMIA International Journal for Social Sciences ISSN-L (Online): 3006–6638 ACADEMIA International Journal for Social Sciences ISSN-L (Online): 3006–6638. *4*(3), 6381–92. https://doi.org/10.63056/academia.4.3.2025.1535
2. Alismaiel OA, Cifuentes-faura J. (2022). *Online Learning, Mobile Learning, and Social Media Technologies : An Empirical Study on Constructivism Theory during the COVID-19 Pandemic*.
3. Amjad AI, Aslam S, Tabassum U. (2024). Tech-infused classrooms: A comprehensive study on the interplay of mobile learning, ChatGPT and social media in academic attainment. Eur J Educ, 59(2), e12625.
4. Amjad S, Younas M, Anwar M, Shaheen Q, Shiraz M, Gani A. (2022). Data Mining Techniques to Analyze the Impact of Social Media on Academic Performance of High School Students. *Wireless Communications and Mobile Computing*, *2022*. https://doi.org/10.1155/2022/9299115
5. Bouton E, Tal SB, Asterhan CSC. Students, social network technology and learning in higher education: Visions of collaborative knowledge construction vs. the reality of knowledge sharing. Internet High Educ. 2021;49:100787.
6. Chugh R, Ruhi U. Social media in higher education: A literature review of Facebook. Educ Inform Technol. 2018;23(2):605–16.
7. Dash NR, Hasswan AA, Dias JM, Abdullah N, Eladl MA, Khalaf K, Farooq A, Guraya SY. The educational use of social networking sites among medical and health sciences students: a cross campus interventional study. BMC Med Educ. 2022;1–11. https://doi.org/10.1186/s12909-022-03569-3.
8. Hamadi M, El-Den J, Azam S, Sriratanaviriyakul N. Integrating social media as cooperative learning tool in higher education classrooms: An empirical study. J King Saud University-Computer Inform Sci. 2022;34(6):3722–31.
9. Huang C. Social network site use and academic achievement: A meta-analysis. Comput Educ. 2018;119:76–83.
10. Jeilani A. Using Comprehensive Approach to Social Media and Undergraduate Students' Performance in Mogadishu, Somalia. Serdec Educational J. 2024;4(4):1–7. https://doi.org/10.70595/sej96.

11. Khalaf MAA, Omar AI, Abdulle AW, Mohamud MA. (2025). *Social media addiction and academic engagement: the role of sleep quality and fatigue among university students in Somalia*. (September), 1–13. https://doi.org/10.3389/feduc.2025.1614746
12. Koul S, Jasrotia SS. Social media: An elixir to boost student engagement in higher education learning. Bus Prof Communication Q. 2025;88(3):399–424.
13. Liu S, Hussain G, Zaigham K, Rashid RM. (2022). *Social Media-Based Collaborative Learning Effects on Student Performance / Learner Performance With Moderating Role of Academic*. *13*(July), 1–12. https://doi.org/10.3389/fpsyg.2022.903919
14. Perez E, Manca S, Fernández R. A systematic review of social media as a teaching and learning tool in higher education: A theoretical grounding perspective. Educ Inform Technol. 2023;28(9):11921–50. https://doi.org/10.1007/s10639-023-11647-2.
15. Sabah NM, Altalbe AA. (2022). *Learning Outcomes of Educational Usage of Social Media: The Moderating Roles of Task – Technology Fit and Perceived Risk*.
16. Salari N, Zarei H, Rasoulpoor S, Ghasemi H, Hosseinian-Far A, Mohammadi M. The impact of social networking addiction on the academic achievement of university students globally: A meta-analysis. Public Health Pract. 2025;9:100584.
17. Shire AA. Impact of Social Media on Students' Academic Performance at Green Hope University, Garowe, Somalia. Int J Sci Res Manage (IJSRM). 2024;12(11):3766–73. https://doi.org/10.18535/ijsrm/v12i11.el02.
18. Tafesse W. Social networking sites use and college students ' academic performance: testing for an inverted U – shaped relationship using automated mobile app usage data. Int J Educational Technol High Educ. 2022. https://doi.org/10.1186/s41239-022-00322-0.
19. Tuck AB, Thompson RJ. The social media use scale: Development and validation. Assessment. 2024;31(3):617–36.
20. Wang Z, Abdullah Z, Hu W. A systematic review of the impact of social media on project-based learning. Sustainability. 2025;17(8):3680.
21. Zarei H, Simpson A, Khan E, Dickinson T. The value of social media use in improving nursing students' engagement: A systematic review. Nurse Educ Pract. 2022;64:103455.

Figures

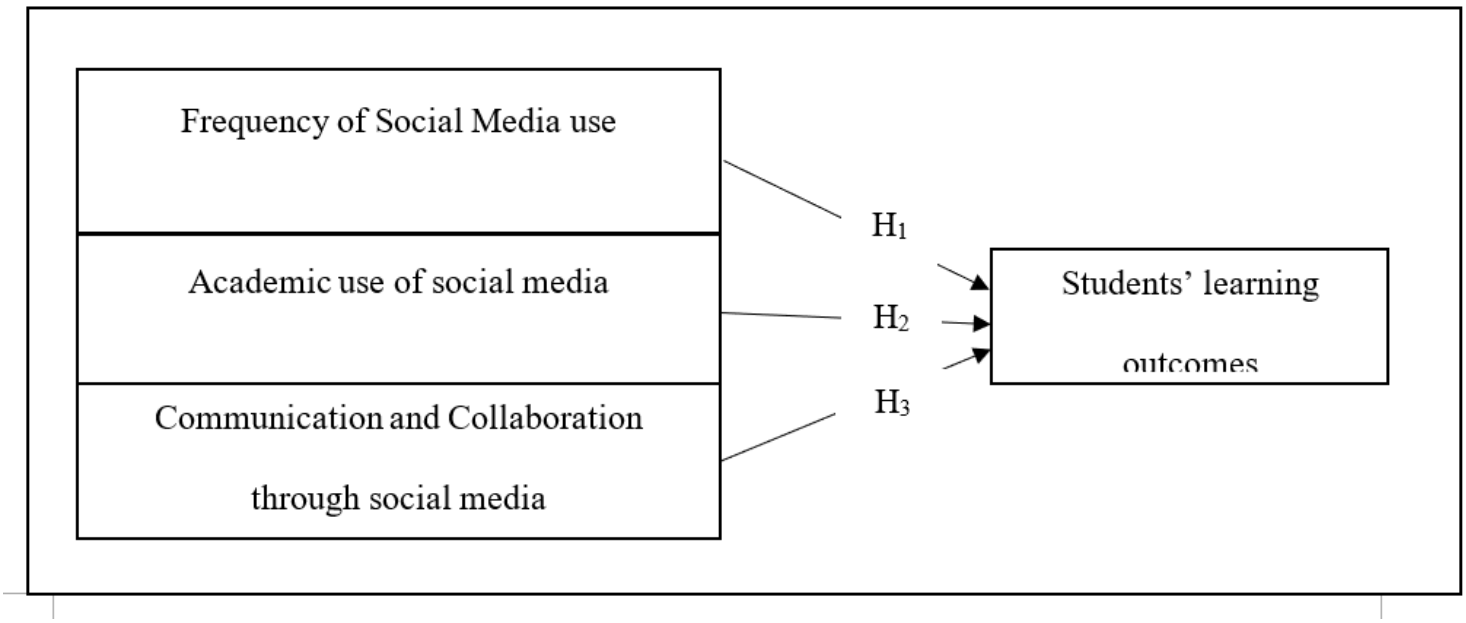


Figure 1

Conceptual framework