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Social Media Usage, Academic Self-Efficacy and Grit: Implications for Student Academic Engagement among University Students in Zambia

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RESEARCH ARTICLE

Abstract

Student engagement is an important latent variable that determines university student's academic success and personal development hence drawing significant attention from researchers and educators globally. This study aimed to investigate the relationship between social media usage, academic self-efficacy, grit, and student academic engagement among university students in Zambia, as well as to determine whether the variables collectively predict student academic engagement. A cross-sectional survey design was used in this study with a convenient sample of 183 (n=183). Four different Likert scale instruments were used to measure social media usage, academic self-efficacy, grit, and academic engagement. Higher reliability coefficient values for all the measuring scales in the study were found. Significant positive correlations were found among social media usage, academic self-efficacy, grit, and student academic engagement. Findings from multiple regression analysis showed that only academic self-efficacy and grit had predictive value for student academic engagement. These results suggest that academic self-efficacy and grit play a significant role in enhancing student academic engagement. To gain competitive advantage, academic institutions should tailor their learning programs in integrating grit building activities such as designing academic activities such as long-term research projects with instructors mentoring, peer feedback and check points. Grit will be developed since students would have to persist through setbacks.

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1 INTRODUCTION

Academic success is a critical measure of university students' future career potential, making it an essential focus in higher education (Barrera-Corominas et al., 2024). Achieving success in terms of high academic performance and steady progression often relies on effective student engagement. Engaged students invest significant effort in their academic and extracurricular activities, develop resilience, and demonstrate self-regulation in their learning processes. Student academic engagement is an important psychological concept due to many positive outcomes associated with it such as regular attendance, active participation in learning activities, and a strong commitment to educational goals.

Consequently, student engagement serves as a safeguard against challenges like burnout, dissatisfaction, and high dropout rates, while fostering positive outcomes such as academic achievement, graduation, and social integration (Lavy, 2020). Positive outcomes of student academic engagement extend beyond mere academic participation. These outcomes include meaningful interactions with faculty, involvement in campus activities, and the establishment of a sense of belonging that facilitates intellectual and social integration, vital for students' persistence and academic success (Kun et al., 2024).

Given the importance of student engagement in predicting academic success, it is imperative to investigate the factors that promote effective engagement. Numerous student engagement antecedents have been identified in psychology literature, including psychological well-being, classroom emotional processes, personal resources, social media usage, academic self-efficacy, personal resources, academic climate, demographic factors, and grit (Bakker et al., 2015; Moghavvemi et al., 2020; Lavy, 2020; Surahman & Adhim, 2021).

Despite numerous determinants of student engagement documented in the literature, due to theoretical and practical reasons, a governable and meaningful level of selection of variables was necessary. Three considerations were used. The first one was to examine available student engagement literature to find indicators of future research direction. The second was to consider known antecedents of student engagement. The third consideration was the importance of the variable to personal and learning institutional effectiveness. Using the criteria as suggested above, it was decided that this study would focus on social media usage, academic self-efficacy, and grit (Scager et al., 2023).

Therefore, the researcher aims to understand why variance exists in student academic engagement, with specific reference to the roles that grit, academic self-efficacy, and social media usage play in this regard, not excluding other predictive variables. Thus, answers to these research questions would provide insights into how the three predictors relate and influence student academic engagement.

This study aimed to investigate the relationship between social media usage, academic self-efficacy, grit, and student academic engagement and to determine whether social media usage, academic self-efficacy, and grit hold predictive value for student academic engagement. The study is important because it tackles the issue of student academic engagement in learning institutions and its relations to other education-related latent variables like academic self-efficacy, grit, and the usage of social media for educational purposes.

This study has reported on the predictive value of academic self-efficacy and grit for student academic engagement. Therefore, the present study has contributed to existing literature in psychology and education through an increased insight into how academic self-efficacy and grit can predict student academic engagement. From a practical standpoint, the findings in this study will benefit students, lecturers, and university administrators. By embracing how the constructs in the study relate, students are helped to understand and improve on academic outcomes. The study would help lecturers come up with teaching interventions aimed at improving academic engagement with instructional materials and the learning processes. By integrating this empirical understanding into policy and practice, university administrators would be positioned to design and implement targeted interventions and strategies that enhance student engagement, ultimately contributing to improved academic outcomes and student success.

2 REVIEW OF LITERATURE

Student engagement is conceptualized as the degree of interest, active participation, and emotional commitment students display towards their learning journey, engagement includes a range of activities such as attending classes, engaging in discussions, collaborating with peers, and completing coursework (Fredricks et al., 2004; Maroco et al., 2016). Kuh (2009) defines student engagement as a latent variable that explains the quality of learning experiences and the extent of students' involvement in productive academic activities. Student engagement is a critical indicator of how well students adjust to university life and is strongly linked to their academic

investment and achievement. Apart from this, academic engagement is a multidimensional construct encompassing behavioral, cognitive, and emotional components, all of which are essential for achieving high-quality learning outcomes (Finn & Zimmer, 2012; Krause & Coates, 2008). The behavioral dimension of academic engagement captures the observable actions of students such as active participation in classroom activities and interactions with academic staff, which is a pre-requisite for developing academic skills and motivation (Moghavvemi et al., 2020). The cognitive dimension of academic student engagement is defined as the investment of students in their learning process, which includes their willingness to exert the mental effort necessary to comprehend complex ideas and master difficult skills (Fredricks et al., 2004).

According to Maroco et al. (2016), emotional engagement pertains to students' positive or negative emotional responses to teachers, peers, and their overall perceptions of school and its value. Emotional support should play a central role in engagement. Research shows that emotional competencies, such as resilience, empathy, and self-regulation, are linked to higher engagement across diverse cultural contexts (Santos et al., 2022). Students who feel emotionally supported and have strong interpersonal skills are often better equipped to navigate academic and social challenges, leading to higher levels of engagement and persistence in their studies. Alangari (2023) found that emotional support, provided through positive teacher-student interactions and a supportive classroom climate, was the strongest predictor of engagement, outweighing even instructional support. This reinforces the view that emotional support is foundational to creating an inclusive and engaging academic experience.

2.1 Conceptualizing Academic self-efficacy

Academic self-efficacy is conceptualized as an optimistic disposition that influences students' choices of activities and the amount of academic effort they invest in (Moghavvemi et al., 2020). It is about a student's self-belief in their inner resources to tackle academic challenges with confidence (Azila-Gbettor et al., 2021; Chang & Chien, 2015; Dogan, 2023). Schunk and Mullen (2012) describes academic self-efficacy as a belief in one's ability to organize and execute the actions required to master academic tasks.

2.2 Conceptualizing Grit

Grit is a psychological trait defined by perseverance, passion, and resilience in pursuing long-term goals (Duckworth et al., 2007). In line with Alalwan (2022), grit is a multi-dimensional personality trait that encompasses two core components: perseverance of effort (PE) and consistency of interest (CI). PE refers to the sustained effort to overcome obstacles in the pursuit of difficult goals, while CI reflects the ability to maintain a passionate commitment to these goals over time. These two dimensions support students' resilience and help sustain their engagement, which is vital in the pursuit of academic productivity and success. Resilience may predict higher levels of engagement, particularly in academic environments that demand prolonged focus and dedication. When students demonstrate grit, they are more likely to persist through difficulties (Moghavvemi et al., 2020).

2.3 Conceptualizing social media usage

The swift advancement of information and communication technologies has led to innovative ways of integrating social media into educational practices. Social media usage in this case refers to the utilization of social media platforms to support learning, teaching, and academic activities. Social media encompasses a range of web-based tools and platforms designed to foster community building through collaborative efforts and information sharing (Ansari & Khan, 2020; Almendingen et al., 2021; Kumar, 2024). These platforms, such as blogs, wikis, multimedia-sharing tools, networking sites like Facebook, and virtual environments, allow users to express themselves and interact with others (Ansari & Khan, 2020).

2.4 The Relationship Between Social Media Usage and Academic Self-Efficacy

Social media platforms can provide students with access to a wealth of academic resources, such as research articles, online lectures, and study groups that enhance academic self-efficacy. Doleck et al. (2020), Al-Jarf (2021), and Ch'ng and Soo Hoo (2022) examined the role of social networking sites in enhancing students' self-efficacy in learning the English language. The study involved 286 students from Umm Al-Qura University in Saudi Arabia, aimed at understanding how social networking sites serve academic purposes and influence self-efficacy. A positive correlation was found between academic uses of social networking sites and self-efficacy ($r = 0.256$, $p < 0.01$). Based on the above argument, it can therefore be hypothesized that social media usage for academic purposes positively influences academic self-efficacy.

2.5 The Relationship between Social Media Usage and Grit

Students who use social media for academic purposes tend to persevere, be passionate, and resilient in pursuing educational goals. Social media can provide a sense of community and social support which enhances grit by fostering a sense of belonging and motivation (Ansari & Khan, 2020). In Almendingen et al. (2021) and Kumar (2024), it was found that students who used social media to collaborate on group projects demonstrated higher levels of perseverance and self-regulation. Ch'ng and Soo Hoo (2022) investigated grit as a mediator between social media addiction and academic procrastination, finding that social media addiction predicts lower levels of grit, which in turn leads to increased procrastination. Their study highlights a significant behavioral consequence of social media addiction, showing how diminished perseverance can hinder students' ability to manage academic tasks effectively. This study suggests that responsible social media usage for educational purposes can enhance grit. It can therefore be hypothesized that social media usage for education purposes positively influences grit.

2.6 The Relationship between Social Media Usage and Academic Engagement

By interacting with social media platforms, students connect with peers, create a supportive virtual learning community, and ultimately improve their learning experience, leading to enhanced engagement (Alshuaibi et al., 2018; Manca & Ranieri, 2020). Platforms such as Facebook, Twitter, and Instagram, once primarily social in purpose, are now utilized for academic discussions, sharing study materials, and fostering peer connections (Tess, 2013). These platforms have the capacity to enhance engagement by increasing interaction between students and their peers or instructors, offering new channels for communication and collaboration (Tess, 2013). Research has shown that using social media as an educational tool can enhance student engagement (Anierobi et al., 2024). In a study involving Malaysian business students found that incorporating social media into course activities helped students connect classroom material to real-world applications, thereby increasing both engagement and academic performance (Alshuaibi et al., 2018). It can therefore be hypothesized that social media usage for education purposes positively influences academic engagement.

2.7 The Relationship between Academic Self-efficacy and Grit

When students believe they are capable of succeeding, they are more likely to persist in their academic efforts, overcome setbacks, and actively participate in the learning process (Fredricks et al., 2004). The importance of self-efficacy lies in its role as a facilitator of resilience and persistence (Dela Cruz, 2023). Based on this argument, it can therefore be hypothesized that academic self-efficacy positively influences grit.

2.8 The Relationship between Academic Self-efficacy and Academic Engagement

Academic self-efficacy refers to students' confidence in their capability to achieve academic outcomes, allowing students to take ownership of their learning experiences and stay engaged despite academic or personal obstacles (Zhang, 2023). Empirical evidence has shown that academic efficacy is positively correlated with academic engagement. Azila-Gbettor et al. (2021) conducted a cross-sectional study to explore how self-efficacy and autonomous motivation influence student engagement within a higher education context. A sample of 512 university students was selected via convenience sampling, and data were collected through self-reported questionnaires. Using descriptive statistics and Partial Least Squares Structural Equation Modeling (PLS-SEM) for data analysis, the researchers found that both self-efficacy and autonomous motivation significantly improved students' peer and intellectual engagement. Meng and Zhang (2023) explored the relationship between academic self-efficacy, academic engagement, and academic performance in university students. Their study, which included 258 participants, highlighted the significant role of academic self-efficacy in predicting academic achievement, both directly and indirectly through academic engagement. The authors found a strong positive correlation between self-efficacy, engagement, and performance.

A recent study by Benlahcene et al. (2024) explored the impact of social and personal factors on academic engagement among high school students in Malaysia, specifically examining how self-efficacy mediates the relationship between interpersonal relationships (with parents, peers, and teachers) and various dimensions of student engagement, including cognitive, behavioral, agentic, and emotional engagement. The study surveyed 477 students using a cross-sectional approach and analyzed the data through structural equation modelling (SEM) with AMOS software. Results for this study indicated that self-efficacy fully mediated the relationship between interpersonal relationships and student engagement across all dimensions, underscoring the essential role of supportive relationships in fostering students' self-efficacy and promoting engagement within their academic environment. Based on the above argument and empirical evidence, it is therefore hypothesized that academic self-efficacy has a positive influence on academic engagement.

2.9 The Relationship between Grit and Academic Engagement

Grit, as introduced by Duckworth et al. (2007), focuses on an individual's capacity for sustained effort and perseverance in the face of challenges, and is more likely to enhance engagement. This implies that students with higher grit are more likely to experience higher engagement. Recognized as a potentially critical factor in students' academic success, grit has shown positive correlations with academic engagement. A study by Hodge et al. (2018) involving 395 Australian university students found a positive relationship between grit and engagement. Yau and Shu (2023) investigated the connection between grit and student engagement during the COVID-19 pandemic, a period that reshaped educational practices and student learning experiences. The study highlighted that grit, particularly the perseverance of effort (grit-PE), positively correlates with student engagement, suggesting that students who persist in their efforts tend to be more engaged in their academic work.

Moreover, Van Zyl et al. (2022) used resilience a similar variable to grit to determine whether it has significance in relation to student engagement the findings show a positive relation between grit(resilience) and student engagement(success) particularly in an African context further outlining the need for educators to provide an environment that encourages resilience as a key personal attribute in achieving academic success. Similarly, a study conducted by Mason (2018) explored the impact of grit on academic success among South African university students, examining 121 first-year participants. Data were collected via the Grit Scale, which measures both consistency of interest and perseverance of effort, alongside academic performance metrics over one semester. Results showed that the consistency of interest component accounted for 3% of the variance in students' achievement, while perseverance of effort explained a greater share, 9%. High-grit students generally achieved better academic results, suggesting grit as a key personal resource

for academic resilience and success (Mason, 2018). It is therefore hypothesized that grit has a positive influence on student engagement.

3 THEORETICAL FRAMEWORK

3.1 Social Cognitive Theory

The application of Social Cognitive Theory and Grit Theory in this study is crucial for understanding how personal traits and behaviors, such as academic self-efficacy, grit, and social media use, impact student engagement. Bandura (1986) explains how individual beliefs, behaviours, and environmental influences interact to shape outcomes. Central to this theory is the concept of self-efficacy the belief in one's ability to succeed in specific tasks. Students who believe in their academic abilities are more likely to stay motivated, overcome challenges, and persist in their efforts, which are also key elements of grit. Duckworth et al. (2007) Grit Theory builds on this foundation by focusing on the importance of long-term effort and passion in achieving goals. Grit is especially relevant in academic settings, where sustained commitment is often needed to succeed. Together, these theories provide a strong framework for examining what keeps students engaged.

3.2 Self-Determination Theory

Moreover, the inclusion of Self-Determination Theory (Deci & Ryan, 1985) deepens this theoretical foundation by highlighting how intrinsic and extrinsic motivations shape academic engagement. SDT posits that when students experience autonomy, competence, and relatedness, they are more likely to be intrinsically motivated, leading to higher levels of engagement and persistence. This aligns with Social Cognitive Theory's emphasis on self-efficacy and personal agency, as well as Grit Theory's focus on sustained effort and long-term goal orientation. Together, these theories provide a comprehensive framework for understanding how motivation, belief in one's abilities, and personal perseverance interact to drive student engagement, especially in the context of increasingly complex learning environments influenced by digital tools and social dynamics.

4 METHODS

4.1 Research Design

A cross-sectional quantitative research design was employed in this study, aligning with the primary objective of investigating the relationships among social media usage, academic self-efficacy, grit, and academic engagement among university students. This design was deemed appropriate as it facilitates the collection of data from a population at a single point in time, allowing for efficient examination of associations between multiple psychological constructs without manipulating any variables. Such a design is particularly suitable for studies aiming to explore correlations or predictive relationships in a natural academic setting.

4.2 Sampling Techniques

A non-probability sampling technique specifically convenience sampling, was utilized to select respondents. This approach was chosen due to its practicality and feasibility within the university context, enabling researchers to efficiently access many participants and achieve a high response rate of 91.5% (183 out of 200 questionnaires distributed). Although convenience sampling may limit the generalizability of the findings due to potential selection bias, it remains a widely accepted method in exploratory behavioral research, especially when resources and access to a randomized sample are constrained. These methodological choices were made to balance research rigor with feasibility while still achieving meaningful insights into student engagement dynamics.

4.3 Research Instrument

The study employed established and validated instruments to measure the key variables. Social media usage was assessed using the Social Media Use Scale (SMUS) developed by Tuck and Thompson (2023), which utilizes a six-point Likert scale and comprises four subscales: belief-based, consumption-based, image-based, and comparison-based usage with all items demonstrating good internal consistencies ranging between .75 to .86. Academic self-efficacy was measured using the General Academic Self-Efficacy Scale (GASE) (Van Zyl et al., 2022; Nielsen et al., 2018), rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The GASE has been widely validated, exhibiting good internal consistency with a reported Cronbach's alpha of 0.81 (Darmayanti et al., 2020). Grit was measured using the Short Grit Scale (Grit-S) developed by Duckworth et al. (2007), which includes 12 items assessing two dimensions: consistency of interests and perseverance of effort. The consistency of interests subscale has reported reliability coefficients ranging from 0.73 to 0.79, while the perseverance of effort subscale ranges between 0.60 and 0.78. In Li and Lerner (2011), the overall scale exhibited alpha values ranging from 0.72 to 0.80. Finally, student engagement was assessed using the Higher Education Student Engagement Scale (HESES) developed by Zhoc et al. (2019), which measures five dimensions: academic engagement, cognitive engagement, social engagement with peers, social engagement with teachers, and affective engagement. The HESES demonstrated high psychometric properties, including strong internal consistency with Cronbach's alpha values ranging from 0.70 to 0.87, as well as factorial and predictive validity. Collectively, these instruments provided a reliable and comprehensive means of capturing the study variables for analysis.

4.4 Data Gathering Procedure

The following steps were undertaken in collecting the data. Ethical clearance was obtained from the school's research ethics committee prior to data collection. Permission from the school was secured by sending a letter of request to the principal and concerned teachers to allow the administration of the research instrument during class hours. Informed consent was obtained from participants and their parents or guardians, outlining the purpose of the study, their rights, and assurance of confidentiality. The instrument was pilot tested with a small group of students (not part of the main sample) to ensure clarity and reliability. Printed or digital versions of the questionnaire were then distributed to the selected participants. Completed questionnaires were collected, and incomplete responses were excluded from analysis. Finally, the responses were encoded into SPSS for statistical processing.

4.5 Statistical Treatment

The data was analyzed with SPSS version 27. Internal consistency was assessed for all measurement scales, and descriptive statistics were calculated for all study variables. Correlational analysis was performed to assess the degree to which the latent variables in the study are linearly related (Büyüköztürk et al., 2011; Dullas, 2018). In interpreting correlational outputs, the guidelines of Darmayanti et al. (2020) were used. Significance values were set at p 0.05. r values between 0.10 and 0.29 indicated small correlations, between 0.30 and 0.49 medium correlations, and between 0.50 and 1 large correlations. Multiple regression analysis was performed to determine if the two independent variables hold predictive value for student academic engagement.

5 RESULT

Table 1 presents the descriptive statistics for the study variables, including social media usage, academic self-efficacy, grit, and student engagement. In this study, mean score interpretation was based on the following criteria: where 1.00 - 1.80 reflects a very low mean score, 1.81 - 2.60 reflects a low mean score, 2.61 - 3.40 reflects a moderate mean score, 3.41 - 4.20 reflects a high mean score, and 4.21 - 5.00 reflects a very high mean score.

Table 1. Descriptive Statistics

Variables	Mean	Standard Deviation	Rank
Social Media usage	2.511	2.114	4
Academic self-efficacy	3.204	1.207	3
Grit	3.699	1.018	1
Student engagement	3.315	1.335	2

To assess the internal consistency of the measuring instruments used in this study, Cronbach's alpha coefficients were computed. The results indicated that, generally, the reliability of the four scales was satisfactory. They all met the benchmark reliability standard of $\alpha \geq 0.70$ (Darmayanti et al., 2020). The social media usage scale had a Cronbach alpha value of 0.799, the academic self-efficacy scale had a value of 0.865, the grit scale had a value of 0.905, and the academic engagement scale had a value of 0.898, as shown in Table 2.

Table 2. Reliability results

Subscale	Sample Size	Cronbach Alpha
S-media usage	183	0.799
A-self-efficacy	183	0.865
Grit	183	0.905
A-engagement	183	0.898

Pearson correlations between the five constructs were calculated. All hypothesized relationships were significant. A moderate positive relationship was found between social media usage and academic self-efficacy ($r = 0.353$; $p < 0.01$), indicating that higher social media usage is associated with higher levels of academic self-efficacy among students. This suggests that students who engage more with social media also tend to have greater confidence in their academic abilities. A small positive correlation was found between social media usage and grit ($r = 0.221$; $p < 0.01$), implying that social media usage has a weak but positive association with grit. This suggests that students who use social media more frequently may also exhibit slightly higher perseverance and passion for long-term goals.

Furthermore, a moderate positive relationship was found between social media usage and student engagement ($r = 0.312$; $p < 0.01$), indicating that students who use social media more frequently are also more likely to be engaged in their academic activities. This suggests that social media usage may play a role in promoting student engagement. A strong positive relationship was found between academic self-efficacy and grit ($r = 0.570$; $p < 0.01$), highlighting that students who believe in their academic abilities also tend to exhibit higher levels of grit. This suggests that a sense of academic self-efficacy is an important predictor of perseverance and long-term goal commitment. A strong positive relationship was also found between academic self-efficacy and student engagement ($r = 0.595$; $p < 0.01$), indicating that students with higher academic self-efficacy are more likely to be engaged in their academic work. This implies that fostering academic self-efficacy may help improve overall student engagement. Finally, a moderate positive relationship was found between grit and student engagement ($r = 0.579$; $p < 0.01$), suggesting that students who are grittier tend to be more engaged in their academic activities. This highlights the importance of perseverance and passion for academic success in promoting student engagement.

Table 3. Correlation coefficients for social media usage, academic self-efficacy, grit, and academic engagement.

Scale	1	2	3	4
Social media usage	1			

Academic self-efficacy	0.353**	1		
Grit	221**	570**	1	
Academic engagement	0.312**	0.595**	0.579**	1

Note: *, p <0.05; **, p <0.01.

The regression analysis results are summarized in the Model Summary as shown in Table 4. The obtained R value of 0.671 reflects a moderate correlation between the predictors and the dependent variable, student engagement. Meanwhile, the R^2 value of 0.450 indicates that 45% of the variance in student engagement can be explained by the model. This finding implies that social media usage, academic self-efficacy, and grit collectively contribute substantially to the variation in student engagement, consistent with the observations of Darmayanti et al. (2020) and Satardien and Mahembe (2019).

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.671a	0.45	0.441	10.1073	0.45	48.79	3	179	0

a. Predictors: (Constant), GRIT, SMU, ASE

The analysis of variance (ANOVA) tests the null hypothesis that multiple R in the population equals 0 and reports how well the regression equation fits the data. Results in Table 5 indicate that the regression model is statistically significant (F (3, 179) = 48.790; p < 0.001), meaning that the model predicts student engagement significantly better than using the mean alone

Table 5. Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14952.8	3	4984.28	48.79	0.000b
	Residual	18286.1	179	102.157		
	Total	33238.9	182			

a. Dependent Variable: STE

b. Predictors: (Constant), GRIT, SMU, ASE

Next, is the examination of the multicollinearity of the predictors. Tolerance and Variance Inflation Factor (VIF) values are crucial in determining whether the predictors are highly correlated with each other, which could suggest multicollinearity. Tolerance values lower than 0.10 indicate high correlations among the predictors, while VIF values greater than 10 suggest multicollinearity (Tsvangirai & Chinyamurindi, 2019). The results in Table 6 indicate that all tolerance values are above 0.10 and VIF values are below 10, indicating that there is no multicollinearity among the predictors in the model.

The final step involves determining the individual contributions of each predictor to student engagement. The results in the coefficients table indicate that both academic self-efficacy and grit make significant and unique contributions to predicting student engagement. Specifically,

academic self-efficacy accounts for 35.7% of the variance in student engagement (β = 0.766, t = 5.070, p < 0.001), and grit accounts for 35.2% of the variance (β = 0.760, t = 5.214, p < 0.001).

However, social media usage does not make a statistically significant contribution to predicting student engagement (β = 0.150, t = 1.818, p = 0.071), although it has a positive effect on student engagement. This suggests that while social media usage is positively related to student engagement, it does not uniquely contribute to explaining variation in student engagement once academic self-efficacy and grit are accounted for. Overall, the results suggest that academic self-efficacy and grit are significant predictors of student engagement, while social media usage has a smaller and statistically non-significant role in predicting student engagement.

Table 6. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	19.573	4.037		4.848	0		
	SMU	0.15	0.082	0.108	1.818	0.071	0.875	1.143
	ASE	0.766	0.151	0.357	5.07	0	0.621	1.611
	GRIT	0.76	0.146	0.352	5.214	0	0.674	1.483

a. Dependent Variable: STE

6 DISCUSSION

This study aimed to assess the relationships between social media usage, academic self-efficacy, grit, and academic engagement among students at a tertiary institution in the central province of Zambia, using a quantitative survey design. The second objective was to determine whether social media usage, academic self-efficacy, and grit could predict academic engagement.

The demographic profile indicates that 58.5% of the respondents were male, while 41.5% were female. Most participants were aged between 27 and 31 years (39.4%), followed by those aged 22 to 26 years (30.3%), 16 to 21 years (21.2%), and 32 years and above (7.7%). In terms of academic level, first-year students made up the largest group at 27.3%, followed closely by second year (26.8%), fourth year (24.6%), third year (16.9%), and fifth-year students (4.4%). Regarding the field of study, students from Natural Sciences formed the largest portion (30.1%), followed by Engineering and Technology (27.9%), Social Sciences (21.3%), Business Studies (18.0%), and the School of Education (2.7%).

Reliability analysis results demonstrated high levels of internal consistency ($\alpha \geq 0.70$) for the four measuring instruments, in line with Dullas (2018), and Darmayanti et al. (2020) reliability standards. The social media usage scale recorded an acceptable Cronbach's alpha value of 0.799; the academic self-efficacy scale had a value of 0.865; and both the grit and the student engagement scale displayed strong internal consistency with Cronbach's alpha values of 0.905 and 0.898, respectively. Pearson product-moment correlation coefficients were used to examine the relationships among the four key variables in the study. The first hypothesis posited a relationship between social media usage and academic self-efficacy. The hypothesis was confirmed.

The findings revealed a positive relationship between the two variables, indicating that the use of social media platforms for academic purposes is associated with higher levels of self-efficacy among students. This result aligns with previous studies, such as Almarwaey (2017), which found a significant correlation between social networking sites and academic self-efficacy (r = 0.256, p < 0.01). The second hypothesis, which proposed a relationship between social media usage and grit, was also confirmed. A strong positive, statistically significant relationship was found between the two variables. This suggests that the more students in tertiary institutions use social media platforms for academic purposes, the more determined they would be in pursuing academic goals.

This finding is consistent with prior research, including Ch'ng and Soo Hoo (2022) in which social media usage increases the grit.

The third hypothesis, which proposed a positive relationship between social media usage and student academic engagement, was also confirmed. A strong, positive, statistically significant relationship was found between these two variables, indicating that students' academic engagement is enhanced with the usage of social media platforms. Similar results were found by Bhat and Gupta (2019). The fourth hypothesis, which proposed a positive relationship between academic self-efficacy and grit, was also confirmed. A statistically significant relationship was found between academic self-efficacy and grit, indicating that students' grit improves as their academic self-efficacy increases.

The fifth hypothesis in the study was confirmed. A statistically significant relationship between academic self-efficacy and academic engagement. The more confidence students have in their skills, the more engaged they would be with academic activities. These results are like those of Meng and Zhang (2023), who found a positive correlation between academic self-efficacy and student engagement. The hypothesized relationship between grit and student engagement was also confirmed, as the study results showed a statistically significant relationship between grit and student engagement. These results align with those of Yau and Shu (2023), who found a positive correlation between grit and student engagement. This study has highlighted the significant role that social media usage, academic self-efficacy, and grit play in predicting student academic engagement. The results reinforce existing literature, emphasizing the inter connectedness of these variables and their implications for designing interventions aimed at fostering greater student engagement for overall academic success.

7 CONCLUSION

The results of this study have provided insights into the relationships between the four variables. Social media usage is significantly correlated with academic self-efficacy, grit, and student academic engagement. Academic self-efficacy is also significantly correlated with grit and student academic engagement. Results further revealed that grit is also significantly correlated with academic self-efficacy. Researchers in this study found that academic self-efficacy was the most predictive of academic student engagement. Grit was the second most predictive of academic student engagement when all other variables were held constant. No predictive value for social media usage was found. Social media usage did not show statistical significance for predicting student academic engagement. Understanding how these four variables interrelate is crucial for the education research community and policymakers, as it provides a framework for designing effective learning interventions and policies.

8 RECOMMENDATIONS

The results of this study cannot establish causality between the variables because it employed a cross-sectional survey design rather than a longitudinal research design. A cross-sectional design captures data at only a single point in time (Geldenhuys & Hena, 2017). Longitudinal studies, which track participants over an extended period, would be better suited to uncover causal inferences and provide deeper insights into the dynamics of academic engagement and its predictors. Secondly, the cross-sectional nature of the study does not account for maturational effects, which may influence academic engagement over time. Longitudinal studies, as suggested by Terre Blanche and Durrheim (1999) and Satardien and Mahembe (2019), would provide a more nuanced understanding of how student engagement evolves and is influenced by social media usage, academic self-efficacy, and grit over time.

Thus, a larger sample size, ideally exceeding 200 participants as recommended by most statistical software packages, would allow for more robust statistical analyses, such as Confirmatory Factor Analysis (CFA) to control for measurement errors and Structural Equation Modeling (SEM) for path analysis. As it stands, the sample size in this study slightly falls short of the requirements for these advanced methods, and future studies should aim to increase the sample size to enhance

the reliability and validity of the findings. The relatively small sample size in this study limits the generalizability and strength of the findings. To yield more generalizable and reliable findings, future studies need to address limitations related to sample size, study design, and data collection methods.

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