

Interaksi Dinamis Penggunaan Media Sosial, Efikasi Diri, Resiliensi Akademik, dan Keterlibatan Belajar pada Mahasiswa

The Dynamic Interactions of Social Media Use, Self-Efficacy, Academic Resilience, and Learning Engagement in College Students

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Abstrak

Studi ini mengeksplorasi hubungan antara penggunaan media sosial, efikasi diri, ketahanan akademis, dan keterlibatan belajar di kalangan mahasiswa di Jakarta. Menyadari potensi media sosial sebagai alat pembelajaran yang berharga sekaligus sumber gangguan, penelitian ini menyelidiki peran mediasi efikasi diri dan ketahanan akademis dalam dampak media sosial terhadap keterlibatan mahasiswa. Sebanyak 149 responden yang memenuhi kriteria demografi yang ditentukan berpartisipasi dalam penelitian ini. Analisis statistik, termasuk pengujian hipotesis, analisis regresi, dan uji-T, dilakukan dengan menggunakan perangkat lunak Smart-PLS 4. Hasil penelitian mengungkapkan bahwa meskipun efikasi diri dan ketahanan akademis secara signifikan memediasi hubungan tersebut, ketahanan akademis menunjukkan pengaruh yang lebih kuat. Hal ini menekankan peran penting ketahanan dalam menavigasi kompleksitas media sosial dan mendorong pembelajaran yang efektif. Studi ini menggarisbawahi perlunya memprioritaskan pengembangan ketahanan akademis pada siswa, di samping efikasi diri, untuk memaksimalkan manfaat media sosial untuk pembelajaran dan mengurangi potensi dampak negatif. Rekomendasinya meliputi pengembangan penggunaan media sosial yang bertanggung jawab, mengintegrasikan media sosial ke dalam proses pembelajaran melalui *platform* dan tugas daring, dan meningkatkan kesadaran akan penerapan positif media sosial untuk keberhasilan akademis.

Kata Kunci: media sosial, ketahanan akademis, keterlibatan dalam proses pembelajaran, efikasi diri

Abstract

This study explored the multifaceted relationship between social media use, self-efficacy, academic resilience, and learning engagement among college students in Jakarta. Recognizing the potential of social media as both a valuable learning tool and a source of distraction, the research investigated the mediating roles of self-efficacy and academic resilience in the impact of social media on student engagement. A total of 149 respondents who met the designated demographic criteria participated in the study. Statistical analyses, including hypothesis testing, regression analysis, and T-test, were performed using Smart-PLS 4 software. Findings revealed that while both self-efficacy and academic resilience significantly mediated the relationship, academic resilience exhibited a stronger influence. This emphasizes the critical role of resilience in navigating the complexities of social media and fostering effective learning. The study underscores the need for educators to prioritize cultivating academic resilience in students, alongside self-efficacy, to maximize the benefits of social media for learning and mitigate potential negative impacts. Recommendations include fostering responsible social media usage, integrating social media into the learning process through online platforms and assignments, and raising awareness of the positive applications of social media for academic success.

Keywords: social media use, learning engagement, academic resilience, self-efficacy

Introduction

The increasing use of social media has significantly impacted human capabilities and modernity, particularly in the context of learning and college students' daily lives. While studies have shown a positive impact of YouTube on attention and engagement, increasing students' attention and engagement by 26.8% (Shoufan & Mohamed, 2022), the research has not fully explored its specific and long-term effects on academic performance, hence the research gap of this study. However, the side effects on academic success and effectiveness are still underexplored. Research has shown that the adoption of YouTube, identified by its knowledge transfer, has significantly impacted academic performance (Abu-Taieh et al., 2022). Previous work by Ansari and Khan (2020) revealed how social media revolutionized communications that facilitated students' learning experience with quick access to digital learning communities, course contents, and educators that led to an increase in students' academic performance and engagement, by 9.72 and 10% increase, respectively.

Academic resilience – the ability to bounce back from academic setbacks and challenges – plays a crucial role in navigating the complexities of social media in higher education (Ross et al., 2024). Students with high academic resilience are better equipped to manage distractions, overcome procrastination, and effectively utilize social media for learning purposes (Romano et al., 2021; Shengyao et al., 2024; Polat, 2024). They are more likely to develop healthy online habits, filter out irrelevant information, and leverage social media to connect with peers, access valuable resources, and enhance their learning experience (Adhawiyah et al., 2021; Kurniadi et al., 2022; Mano, 2020). Despite acknowledging the critical role of academic resilience in effectively navigating the complexities of social media for learning, existing research has significantly overlooked and under-investigated this crucial factor (Radhamani & Kalaivani, 2021).

The progress of social media has also been associated with negative effects. It offers unfiltered features that distract students with non-educational content. This might exacerbate loneliness and mental health issues (anxiety and depression) due to daily usages and creates barriers with human relationships and social connections (Sivakumar et al., 2023). Mohammed et al. (2021) argued that if social media was used correctly for academic purposes and knowledge-based learning, students are able to quickly retrieve information and thus positively impact both their self-efficacy and academic performance. Raghunathan et al. (2022) found academic resilience in blended learning, including students' self-efficacy to adapt well to new situations. Therefore, we question, will social media, through YouTube as a learning tool, have a significant impact on college students' learning engagement and academic performance?

This study delves into the multifaceted factors that influence college students' learning engagement. Specifically, it examines the intricate relationship between three key variables: student self-efficacy, social media utilization, and academic resiliency. The objective of this study is to identify the distinct and interrelated impacts of these three factors on college students' learning engagement in order to give educators and policymakers useful information for maximizing the educational process in the digital age.

Literature Review

Ronzhyn et al. (2022) have highlighted the collaboration aspect of affordances, with social media being a part of a solution-solving process. This study highlights the positive contribution of affordances in relationship marketing, where informational media are shared and build relationships with customers (Erobathriek et al., 2023). The Uses and Gratification Theory (UGT) has been used to analyze social media usage, focusing on social interaction and information exchange. The theory suggests that users choose media based on their needs and interests, but it also has consequences. Falgoust et al. (2022) explored UGT in TikTok users' participation for viral challenges, finding that socialization, fear of missing out, and entertainment are motivating factors. Ferris et al. (2021) found that leisure causes decreased emotional consequences, while interpersonal interaction leads to increased emotional

consequences of social media addiction. The more users rely on social media for personal use, the higher the possibility of negative emotional consequences. Social media platforms like Facebook, Twitter, YouTube, and Instagram, have become an integral part of people's lives due to its increasing popularity.

Constructs

In this section, this study defines the four constructs of primary interest: social media use, self-efficacy, academic resilience, and learning engagement. Then, in the next section, this study develops hypotheses about the relationship among these four constructs.

Social media use. While social media can positively impact education through socialization, knowledge sharing, and learning (Sivakumar et al., 2023), it can also lead to anxiety and lower self-esteem (Luhur et al., 2023; Hiustra et al., 2023). From another vantage point, studies have shown that social media can positively influence college students' perceptions and academic performance, as it facilitates cultural adjustment and social interactions (Dumford et al., 2023). Tafesse (2022) has identified social networking sites as a platform that enables profile creations by user and system-supplied information resulting in peer-to-peer networking and engagement between the users. A study by Habes et al. (2022) found that YouTube has a significant impact on students' academic performance due to its ease of use and the knowledge retained from educational videos. The extent of these effects depends on the user's discretion and purpose.

Self-Efficacy. The belief of self-efficacy has been interpreted as "belief in one's capabilities to organize and execute the courses of action required produce given attainments" (Bandura, 1997). The theory posits that perceived self-efficacy indicates to be a behavior indicator to foreign matters compared to past performance. Moreover, individuals who believe in their own abilities (high sense of self-efficacy) will consider challenges as tasks than threats. In a recent study by Wilde and Hsu (2019), they tested participants' low or high levels of self-efficacy in completing a task including the analysis of their differing behaviors and discovered that those with low levels of self-efficacy perform poorly because they lack coping mechanisms, which causes them to get anxious and fail to finish the task at hand.

Furthermore, Bandura (1997) demonstrates that there are four sources from which people's beliefs develop such as: (1) mastery experience, (2) vicarious experience, (3) verbal persuasion, and (4) physiological and affective states. Mastery experience is the result of reflecting on prior performance to complete tasks, whereas vicarious experience is attained by seeing or hearing others to compare. When others provide their opinions, verbal persuasion takes place. People's capacity to read their physiological responses as indicators of their talents is related to their physiological and affective states. It is equally important to understand that self-efficacy can be a future predictor of academic outcomes including but not limited to student engagement and academic performance (Ahmed et al., 2018).

Academic resilience. The term academic resilience was first proposed by Morales and Trotman (2004) in which they interpreted it as the capacity to be able to successfully overcome serious impediments and problems, academically. Yang and Wang (2022) and Garcia-Crespo et al. (2021) explored the factors affecting individuals' resilience, including psychosocial and socio-cultural situations. Risk factors, such as disease, financial difficulties, or living with parents, can negatively impact an individual's attitude towards hardships, determining their resiliency. External factors, such as social support from friends or family, are more likely to aid in growth. Ye et al. (2021) defined resilient students as those from a disadvantaged background with adversities and those from economically developed countries.

Learning engagement. Shao and Kang (2022) explored the correlation between self-efficacy and academic resilience using Social Cognitive Theory (SCT), proposing that individuals with high self-efficacy can successfully overcome obstacles, leading to the development of their academic resilience. Learning engagement, influenced by self-efficacy and academic levels, was predicted as the outcome. Students with high levels of academic resilience can actively learn by overcoming obstacles with

persistent effort. Learning engagement is crucial in the exploration of students' academic behavior and performance (Soepriyatna & Pangaribuan, 2022).

Cognitive engagement, on the other hand, relies to students' intrinsic motivation and self-regulation (Cleary & Zimmerman, 2012). Hence, they expect that all these three constructs influence learning outcomes which explains why there is a positive correlation between high behavioral engagement and higher levels of achievement (Wang et al., 2022). When students participate in academic tasks that requires concentrated effort and full attention, they are demonstrating behavioral engagement. Lastly, students' positive perspective and attitude towards learning tasks are referred to as emotional engagement (Shao & Kang, 2022).

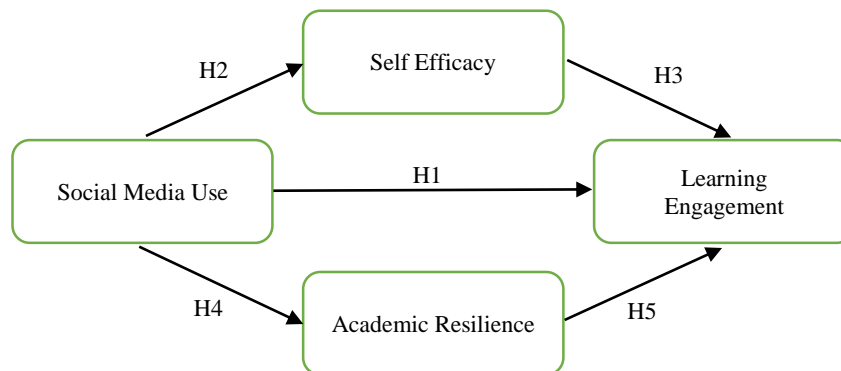


Figure 1 Conceptual Framework of the Study

Social Media Use and Learning Engagement

Research by Dong et al. (2022) noted that host cultural adjustment enables international students to interact with other peers through events or activities, increasing their opportunities. Hence, students will have higher chance of academic engagement through mediators such as bridging capital and cultural adjustment. Al-Rahmi et al. (2020) and Alalwan (2022) added the importance of social interaction to foster student engagement through social media due to its data sharing function that constructed the first hypothesis.

H1: Social media use has a positive effect on learning engagement.

Social Media Use and Self-Efficacy

In recent works of Mahmood et al. (2021), the extended parallel process model (EPPM) was used to examine the relationship of the use of social media and disease prevention, who found that self-efficacy, defined as beliefs about one's ability to carry out recommended responses, influences behavior on social media. Other research by Bandura (1977) and Pekkala and Van Zoonen (2022) add that self-efficacy improves job performance and social media communication since the theory posits that if one has confidence, then he or she will be able to take actions. This indicates that an individual's self-efficacy beliefs will affect their behavior to use social media communication for certain purposes that formulate the following hypothesis:

H2: Social media use has a positive effect on self-efficacy.

Self-Efficacy and Learning Engagement

Research shows a positive correlation between self-efficacy and learning engagement, with self-regulation being a mediator. Bandura's theory suggests that self-efficacy is influenced by a student's motivation, behavior, and performance. High self-efficacy leads to increased participation in learning, which is directly linked to learning outcomes (Luo et al., 2023). High self-efficacy increases participation and performance, leading to the following hypothesis.

H3: Self-efficacy has a positive effect on learning engagement.

Social Media Use and Academic Resilience

Ever since the COVID-19 pandemic, social media usage has significantly increased, with a 10.5% increase in usage from 2020, particularly on networking sites like WhatsApp, Facebook, and Instagram (George et al., 2023). Social media positively influences resilience, fostering communication and information sharing, contributing to wellbeing despite adversity. It also contributes to psychological resilience, helping individuals meet their psychosocial needs (Asghar et al., 2021). Online courses provide access to educational information, fostering academic resilience and higher student involvement. Thus, we build on the fourth hypothesis:

H4: Social media use has a positive effect on academic resilience.

Academic Resilience and Learning Engagement

The perseverance of academic resilience within students will produce a positive outlook in facing learning challenges as well as adapting to the new situation. Study analysis conducted by Sartika and Nirbita (2023), resilience improves students' involvement in learning, contributing to three constructs of learning engagement. Similarly, social networking sites have been found to improve student engagement during online learning. The technology acceptance model (TAM) used in their study suggests that social media use indirectly influences a student's habits, behavior, and academic achievements. Whereby the fifth hypothesis is constructed:

H5: Academic resilience has a positive effect on learning engagement.

Methodology

Adopting a quantitative method, as it is more numerical to draw a more reliable conclusion as well as examining the correlations within the research context (Albers, 2017), this study's conceptual framework can be seen in Figure 1. The measurement indicators for this research can be seen in Table 1.

Measurements

The questionnaire was originally developed in English and translated into Bahasa Indonesia. Measurements are adapted from previous studies. For Social Media Use, five indicators were adopted from Xu et al. (2022) and López-Carril et al. (2021). Additionally, for the variable Self-Efficacy, five indicators are adopted from Yavuzalp and Bahçivan (2020). For the Academic Resilience, five indicators are adopted from Cassidy (2016). Finally, Learning Engagement has eight indicators adopted from Dixson (2015).

Before collecting primary data, an online pre-test was administered to 30 participants after obtaining ethical approval for the research. The pre-test results were analyzed to assess the survey's structure and questions. Based on the feedback received, the survey was revised to enhance its effectiveness. The pre-test demonstrated that participants could easily understand the questions and complete the survey online without encountering any significant issues.

The final questionnaire collected a total of 149 respondents, 119 respondents as the filtered version and 30 respondents was pre-tested. Six demographic questions and five to eight questions for each of the four factors (which will be assessed using a five-point Likert scale) make up the study's questionnaire. This study distributes the questionnaire online using WhatsApp, Instagram, Gmail, and Facebook which the respondents to fulfill the criteria mentioned previously, with history of active user of social media.

Data Collection

Methods for gathering data that may be measured and statistically evaluated are known as data collecting techniques in quantitative study. Testing theories and identifying trends in the connections between study variables are the objectives. Among the often-employed methods is the questionnaire. In quantitative research, this is the instrument that is most commonly utilized. Many of the items in the questionnaire have been pre-planned and have a clear answer scale, such as open-ended questions, multiple choice, or a Likert scale. It is possible to deliver questionnaires both offline and online.

Table 1 Variable Operationalization

Construct	Items	Original Questionnaire Items	Adapted Questionnaire Items
Social Media Use (Xu et al., 2022; López-Carril et al., 2021)	SMU1	Social media is part of my daily activities	Media sosial adalah bagian dari aktivitas saya sehari-hari.
	SMU2	I believe that social media is a positive educational tool for students that should be included more in university classes	Saya percaya bahwa media sosial (alat pendidikan positif bagi mahasiswa) perlu lebih digunakan dalam perkuliahan.
	SMU3	Through social media I can keep informed of news and innovations in my professional field	Melalui media sosial, saya mendapat informasi tentang berita dan inovasi di program studi saya.
	SMU4	Social media can help me in my professional development	Media sosial dapat membantu dalam pengembangan profesional saya.
	SMU5	I use social media sites to solve my academic problem	Saya menggunakan media sosial untuk menyelesaikan masalah akademik.
Self-Efficacy (Yavuzalp & Bahçivan, 2020)	SE1	Complete all assignments on time	Saya selesaikan semua tugas secara tepat waktu.
	SE2	Learn to use a new type of technology efficiently	Saya belajar menggunakan jenis teknologi baru secara efisien.
	SE3	Communicate effectively with technical support via e-mail, telephone, or live online chat	Saya berkomunikasi secara efektif dengan dukungan teknis seperti email, telepon, atau diskusi secara online.
	SE4	Manage time effectively	Saya mampu mengatur waktu secara efektif.
	SE5	Search the online course materials	Saya mencari materi yang berhubungan dengan mata kuliah secara online.
Academic Resilience (Cassidy, 2016)	AR1	I would look forward to showing that I can improve my grades	Saya berharap dapat menunjukkan bahwa saya dapat meningkatkan nilai mata kuliah saya.
	AR2	I would set my own goals for achievement	Saya menetapkan tujuan pencapaian saya sendiri
	AR3	I would work harder	Saya selalu belajar lebih keras.
	AR4	I would use the situation to motivate myself	Saya akan menggunakan situasi/kondisi yang ada untuk memotivasi diri saya sendiri
	AR5	I would try different ways to study	Saya akan mencoba berbagai metode untuk belajar lebih giat lagi.
Learning Engagement (Dixson, 2015)	LE1	Listening/reading carefully	Saya suka mendengarkan/membaca dengan teliti.
	LE2	Taking good notes over readings, PowerPoints, or video lectures	Saya membuat catatan yang baik saat kuliah.
	LE3	Really desire to learn the material	Saya memiliki keingintahuan yang tinggi untuk mempelajari materi perkuliahan.
	LE4	Finding ways to make the course material relevant to my life	Saya mencoba mencari cara bagaimana materi pelajaran dapat diterapkan atau dihubungkan dalam kehidupan nyata.
	LE5	Helping fellow students	Saya suka membantu sesama siswa.
	LE 6	Engaging in conversations online (chat, discussions, email)	Saya gemar terlibat dalam percakapan online (chat, diskusi, email).
	LE7	Doing well on tests/quizzes	Saya selalu berusaha mengerjakan ujian/kuis dengan sebaik-baiknya.
	LE8	Getting good grades	Saya selalu berusaha mendapatkan nilai baik di kelas.

The demographic questions in the first section of the survey will guarantee that the respondents are in line with the study's target population (university students in Jakarta for this study), as questionnaires will include multiple-choice options to answer the questions respondents feel most comfortable answering. This filtering section is essential because the purpose of this paper is to examine active university students who use social media; therefore, non-users of social media will be excluded from the questionnaire. University students in Jakarta were selected for the following reasons: (1) A

large number of college students are concentrated in the capital city, making it easier to recruit respondents for the study; (2) College students are typically young and often highly engaged with technology, making them suitable for current study involving digital media. This study employs the sample size estimation proposed by Hair et al. (2018). A 95% confidence level and a 5% margin of error were maintained throughout the analysis.

Testing for validity and reliability is an essential step in quantitative research to guarantee the accuracy and dependability of the data gathered. The degree to which a study tool (such as a test or a questionnaire) truly assess what it is supposed to measure is known as validity. On the other hand, reliability quantifies how consistently a study tool yields the same outcomes when employed repeatedly under the same circumstances. Comparing measurement findings with appropriate theoretical structures or external criteria is the standard method for validating a measurement. There are several methods for doing reliability testing, including split-half, test-retest, and internal consistency testing. Researchers can increase their confidence in their study findings and make sure that they can be applied to a larger population by carrying out validity and reliability tests.

The data analysis of this study starts with validity test which was identified as to the extent measured by a test that corresponds to daily language, given that the test results are valid (Buntins et al., 2017). The convergent validity is calculated using the average variance extracted (AVE) which should be 0.50 or greater to be accepted (Cheung et al., 2023). Discriminant validity is formulated through the AVE or Fornell-Larcker criterion which must be greater than 0.70 (Wisniarski et al., 2024). Conversely, reliability has been interpreted to measure repeatedly to produce consistent results. The Cronbach's alpha serves as the reliability coefficient with at least 0.70 or greater, with less than 30% of variation of the latent variable.

Multicollinearity test (VIF) measures more than two independent variables and whether they are correlated (Shrestha, 2020). It can be measured through the variance inflation factor (VF) to quantify the variance from the estimated regression coefficient. VIF value of less than <3 indicates that collinearity is not a problem, VIF = 3 to 5 indicates collinearity problems are uncritical, VIF greater than > 5 indicates that critical collinearity problems are likely to arise. T-test is conducted through comparison of alpha 0.05 or t-statistics to alpha 0.05, with significance level of 0.05 or 5%.

In quantitative research, PLS-SEM (Partial Least Squares Structural Equation Modeling) is a widely used data analysis technique, particularly when researchers need to examine complex relationships between several latent variables and their indicators. Numerous benefits, such as flexibility in evaluating data with different sample sizes, non-normal data distributions, and sophisticated models, make PLS-SEM the preferred method. Furthermore, PLS-SEM analysis results are rather simple to understand, particularly when considering business and management. PLS-SEM analysis may also be performed with a variety of software programs, such as SmartPLS, which makes it simpler for users.

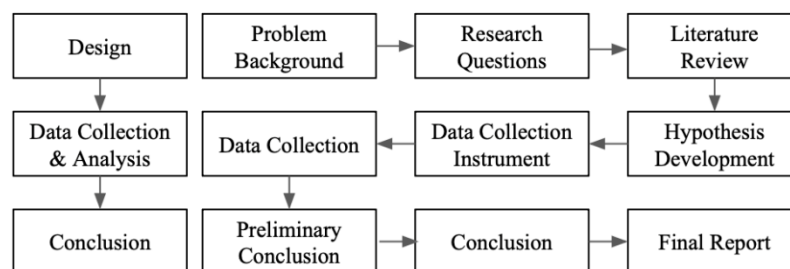


Figure 2 Research Process Design

Research Process Design

Outlining the steps involved in conducting this research, Figure 2 depicts this study's research process, which begins with the design phase, setting the overall framework for the study. This is followed by problem background and research questions, where the specific research focus is defined. The literature review step involves exploring existing knowledge on the topic. Next, the data collection

phase is divided into data collection and analysis and data collection instrument. The latter focuses on developing tools for data collection. The hypothesis development step comes next, where researchers formulate testable predictions. The process concludes with conclusion and final report stages, where findings are summarized and disseminated.

Results and Discussion

Results

After spreading the questionnaire to a wider audience, the present research obtained 149 responses through random sampling. The respondents' demographic profile comprises 66.4% female (99), 21-24 Gen Z at 52.4% (78), and undergraduates 139 (93.2%).

Normal outer loadings should generally be at least 0.708; in many instances, 0.70 is seen as being close enough to be acceptable (Christian et al., 2024). An outer loading below 0.70 should be closely reviewed, as item removal may affect the construct's composite reliability, content reliability, and content validity (Hair et al., 2018).

Composite reliability (CR) and Cronbach's Alpha (α), two techniques frequently used in SEM-PLS, were used to evaluate the measurement model's reliability. CR gives an approximation of a construct's actual internal consistency, whereas Cronbach's Alpha sets the lowest bound for its reliability (Hair et al., 2018). The reliability was deemed sufficient with α values of 0.7 and very excellent with 0.8, in accordance with Kline's (2013) criteria. The α values for every variable showed extremely strong dependability, as seen in Table 2.

This study used the minimum suggested Average Variance Extracted (AVE) of 0.5 to assess the construct's validity (Jeyhan & Pangaribuan, 2023). Convergent validity is still acceptable, though, if AVE is less than 0.5, provided that the composite reliability is more than 0.6. Table 2 shows that all of the AVE values are higher than the 0.5 minimum level.

Table 2 Reliability and Validity of the Variables

Construct	Items	Loadings	VIF	α	R^2	CR	AVE
Academic Resilience (AR)	AR1	0.888	3.387	0.961	0.842	0.961	0.864
	AR2	0.929	4.727				
	AR3	0.872	2.895				
	AR4	0.888	3.116				
	AR5	0.906	3.787				
Learning Engagement (LE)	LE1	0.864	3.143	0.957	0.903	0.961	0.771
	LE2	0.881	3.579				
	LE3	0.854	2.910				
	LE4	0.812	2.381				
	LE5	0.839	2.723				
	LE6	0.836	2.731				
	LE7	0.864	3.280				
	LE8	0.903	4.221				
Self-Efficacy (SE)	SE1	0.875	2.901	0.956	0.792	0.957	0.851
	SE2	0.889	3.004				
	SE3	0.846	2.447				
	SE4	0.904	3.425				
	SE5	0.720	1.716				
Social Media Use (SMU)	SMU1	0.773	1.900	0.941	n/a	0.954	0.812
	SMU2	0.852	2.417				
	SMU3	0.895	3.259				
	SMU4	0.914	3.783				
	SMU5	0.839	2.337				

VIF = Variance Inflation Factor; α = Cronbach's Alpha; R^2 = Coefficient of Determination; CR = Composite Reliability; AVE = Average

To determine if the model has a multicollinearity issue, collinearity was also examined throughout the analysis. The Variance Inflation Factor (VIF) is frequently used to assess the variables' collinearity (Hair et al., 2018). There is no multicollinearity among the independent variables, according to the tolerance and VIF values that were obtained (Tolerance > 0.2, VIF < 10).

The coefficient of determination, or R^2 , is used to measure a model's quality of fit. It is a crucial statistical metric for hypothesis testing. R^2 has a value between 0 and 1. According to Sapra (2014), a model with a high R^2 value is preferred and regarded as the best. Table 2 shows that the variables of SE, SMU, and AR account for 90.3% of LE.

To ensure that there would be no overlap amongst the constructs used, discriminant validity was employed to assess a construct's originality and determine what set it apart from the others. Using cross-loading indicators, namely the Fornell and Larcker criteria, discriminant validity may be assessed. According to a criterion for assessing discriminant validity put forward by Fornell and Larcker (1981), the square root of AVE for each construct must be higher than the correlation value with the other variables. Table 3 displays the findings of the assessment of the Fornell and Larcker criteria for this investigation. It demonstrates that every construct had an AVE square root value that satisfied the requirements.

Table 3 Discriminant Validity (Fornell-Larcker Criterion)

Construct	AR	LE	SE	SMU
Academic Resilience	0.873			
Learning Engagement	0.873	0.826		
Self-Efficacy	0.900	0.900	0.880	
Social Media Use	0.914	0.847	0.846	0.862

Bootstrap resampling, or bootstrapping, is the process of establishing the significance level of the path coefficients and testing hypotheses. If the t-statistic is more than 1.96, the path coefficient in this research will be significant; it is convenient to use this value as a cutoff point for determining whether or not a deviation should be regarded as significant. The p-value is the likelihood of rejecting a true null hypothesis (Hair et al., 2018). This study has selected a significance threshold of 5%. According to this metric, the p-value for our hypothesis must be less than 0.05 in order for the study to be deemed significant (Prawira & Pangaribuan, 2023). Table 4 displays the outcomes of PLS bootstrapping: With a p-level of less than 0.05 and a t-statistics value greater than 1.96, four (H2, H3, H4, and H5) of the hypotheses were supported since their relationships were significant. Because H1's t-statistics and p-value were below the acceptable threshold, it was rejected.

The structural model is analyzed to test the impact of the exogenous variables on the endogenous variable (Hair et al., 2018). The current study has three independent variables (self-efficacy, social media use, and academic resilience) and dependent variable of learning engagement. The R^2 value, as also illustrated in the measurement model of the study (see Figure 3), implies that the three sets of exogenous latent collectively explained 90.3% of the variance in learning engagement. Self-efficacy and academic resilience, as dependent variables, have R^2 values of 79.2% and 84.2%, respectively, indicating that they are largely explained by the independent variable, social media use.

In statistical analysis, beta (β) value, t-statistic, and p-value are essential for evaluating research findings. The β value represents the strength and direction of the relationship between the independent and dependent variables in a regression model. On the other hand, the t-statistic is used to test the statistical significance of the regression coefficient (β value). If the t-statistic exceeds a critical value at a certain level of significance (e.g., in this study, the α is 0.05), then we can reject the null hypothesis and conclude that there is a significant relationship between the variables. The p-value, which is the probability of getting at least an extreme result if the null hypothesis is true, provides a measure of the strength of the evidence against the null hypothesis. The smaller the p-value, the stronger the evidence to reject the null the hypothesis and support a significant relationship between the variables. To summarize, the β value shows how much influence one variable has on another, the t-statistic tests

whether the influence is statistically significant, and the p-value gives us our level of confidence in the test results.

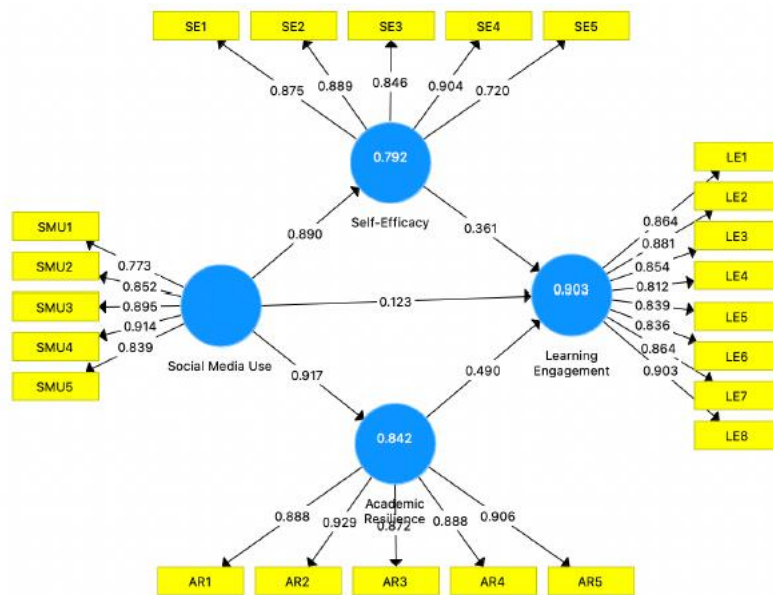


Figure 3 Measurement Model of the Study

Social Media Use and Learning Engagement

The finding of hypothesis testing for the first research hypothesis was found to be non-significant ($\beta = 0.123$, $t = 1.033$, $p = 0.302$). Therefore, the first hypothesis, or H1, of this study, which states that social media use (SMU) has a significant and positive effect on learning engagement (LE), was rejected. The study's inability to prove a strong connection between social media use and student engagement in college could be explained by various factors. These include the study's possible failure to consider other influential factors, such as a student's academic history or personality. Although Gen Z and undergraduate students are dominant in this study, there is a wide variation in the interests, motivations, and learning styles of individuals within this group. Some may use social media to support learning, while others use it more for socializing, seeking entertainment, or simply passing the time. Other factors need to be considered to get a more complete picture, such as the type of social media used frequently, the duration of use, the quality of the internet connection, and the learning environment can also affect learning engagement. Additionally, the research methods might have limitations, such as a small sample size or flawed design. Furthermore, the relationship between social media and learning is likely intricate, with both positive and negative outcomes depending on the context. Lastly, the dynamic nature of social media, with its constantly evolving features and trends, makes it challenging to conduct consistent research. The rise of platforms like YouTube and TikTok live streaming exemplifies how these changes can unexpectedly affect student attention and academic performance.

Table 4 Hypothesis Test

Path	Original Sample (β)	Sample Mean	Standard Deviation	t-statistics	P values
H1: SMU \rightarrow LE	0.123	0.141	0.119	1.033	0.302
H2: SMU \rightarrow SE	0.890	0.891	0.017	51.504	0.000
H3: SE \rightarrow LE	0.361	0.365	0.061	5.923	0.000
H4: SMU \rightarrow AR	0.917	0.918	0.024	38.806	0.000
H5: AR \rightarrow LE	0.490	0.468	0.137	3.586	0.000

Social Media Use and Self-Efficacy

The finding of hypothesis testing for the second research hypothesis was found to be significant ($\beta = 0.890$, $t = 51.504$, $p = 0.000$). Therefore, H2 of this study, which states that social media use (SMU) has a significant and positive effect on self-efficacy (SE), was accepted. The significant relationship between social media use and college students' self-efficacy could be attributed to several factors. Social media can provide platforms for students to connect with peers, mentors, and academic communities, fostering a sense of belonging and support. Engagement in online discussions, collaborative projects, and knowledge sharing can enhance students' confidence in their abilities and academic potential. Furthermore, social media can offer access to diverse perspectives, information, and learning resources, broadening students' horizons and empowering them to take on new challenges.

Self-Efficacy and Learning Engagement

The finding of hypothesis testing for the third research hypothesis was found to be significant ($\beta = 0.361$, $t = 5.923$, $p = 0.000$). Therefore, H3 of this study, which states that self-efficacy (SE) has a significant and positive effect on learning engagement (LE), was accepted. Students with high self-efficacy, or a strong belief in their ability to succeed academically, are more likely to exhibit higher levels of engagement in their learning. This is because self-efficacy influences crucial aspects of the learning process. Students with high self-efficacy are more likely to set challenging goals, persist in the face of obstacles, utilize effective learning strategies, seek help when needed, and demonstrate a positive attitude towards learning.

Social Media Use and Academic Resilience

The finding of hypothesis testing for the fourth research hypothesis was found to be significant ($\beta = 0.917$, $t = 38.806$, $p = 0.000$). Therefore, H4 of this study, which states that social media use (SMU) has a significant and positive effect on academic resilience (AR), was accepted. Social media can provide a platform for students to connect with peers, mentors, and support networks, offering emotional and social support during challenging academic periods. Sharing experiences, seeking advice, and finding encouragement within online communities can enhance students' ability to cope with academic setbacks, maintain motivation, and persevere towards their academic goals.

Academic Resilience and Learning Engagement

The finding of hypothesis testing for the fifth research hypothesis was found to be significant ($\beta = 0.490$, $t = 3.586$, $p = 0.000$). Therefore, H5 of this study, which states that academic resilience (AR) has a significant and positive effect on learning engagement (LE), was accepted. Resilient students are better equipped to cope with academic stress, manage time effectively, and adapt to changing learning environments. Their ability to persevere through challenges, such as difficult coursework, poor grades, or personal setbacks, fosters a sense of agency and control over their learning.

The Mediating Roles of Academic Resilience and Self-Efficacy

This research suggests that social media use can positively impact college students' learning engagement through two distinct pathways: self-efficacy and academic resilience. While both pathways demonstrate a significant relationship, the path mediated by academic resilience appears to have a stronger influence on learning engagement. This finding highlights the crucial role of resilience in navigating the challenges and setbacks often encountered in higher education. Academic resilience, characterized by attributes like perseverance, adaptability, and a growth mindset, likely empowers students to effectively leverage social media for learning purposes, such as accessing resources, collaborating with peers, and seeking support, ultimately leading to greater engagement in their studies.

Conclusion

This study investigates the impact of social media use on learning engagement and academic performance among college students in Jakarta area. The research found that social media only significantly impacts learning engagement through the intervention of mediating variables such as self-

efficacy and academic resilience. Four of the study's hypotheses were significant, while one hypothesis was not significant. Positive social media use has been linked to improving learning engagement through self-efficacy and academic resilience, which are self-built within individuals. The study concluded that academic resilience and self-efficacy are significant factors as mediators influencing the relationship between social media use and learning engagement. Academic resilience has the highest significant impact compared to self-efficacy in bridging social media use towards learning engagement. Therefore, academics, educators, and educational institutions should focus on facilitating academic resilience first, followed by self-efficacy as intrinsic skills within college students to improve their academic performance and learning engagement. To create resilient and independent students, various activities can be implemented, such as holding workshops on time management and effective study techniques (to increase learning productivity), mentoring programs that connect senior and junior students (to provide academic support and guidance), and giving collaborative cross-disciplinary project assignments (to encourage students to work together and solve complex problems). In conclusion, the study reveals that academic resilience and self-efficacy are significant factors in predicting social media use impact on learning engagement, while social media use is not directly or significantly affected. To enhance learning engagement, it is recommended that educators and educational institutions teach students responsible social media usage, plan activities and campaigns to inform people about the advantages of social media for learning and integrate social media with learning through online learning platforms, academic forums, and assignments. To increase engagement in learning, various activities can be implemented, for example, campuses can create official Instagram accounts and post educational content (e.g., study tips, inspiring alumni stories, or university activity announcements), organize vlog competitions about the most memorable online learning experiences and share on YouTube, and form online learning platforms (to form discussion groups and provide learning resources).

The study may be subject to sampling bias if the participants are not representative of the broader population of college students in Jakarta. To capture opinions of members of college students in Jakarta, this study's samples of 149 may not be representative of the entire population. The use of WhatsApp and Instagram as a medium for survey distribution has significant limitations, especially in terms of sample representation. Since only students who actively use these platforms can be reached, the research results obtained tend to be biased towards the group of active social media users. This can ignore the views and experiences of students who are less active or do not use these platforms, thus limiting the generalizability of the research results. Future research should investigate the impact of different social media platforms (e.g., Facebook, Instagram, TikTok) on learning engagement and academic resilience to gain a more nuanced understanding of the role of these platforms in student lives. Given that our findings were correlational, future studies might wish to use experimental techniques to examine our findings in more detail or use qualitative designs to explore college students' academic resilience, self-efficacy, and learning engagement. Future research should investigate potential antecedents of learning engagement, especially in the context of the sudden change of learning environment post-pandemic.

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