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Research Article

Assessing the Relationship between Self-Regulation Utilization and Academic Satisfaction among University Students

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Abstract: The relationship between students' self-regulation and their academic satisfaction is somewhat complex and subjective, thus hard to analyze. The central aim of the study is to examine the relationship between self-regulation strategies and academic satisfaction among students at the University of Mindanao. This study used a quantitative method, especially a non-experimental correlational approach. The data were collected through Google Forms using adapted scale and validated instruments. The 205 respondents of the main campus of the University of Mindanao were selected through a stratified random sampling method to ensure representation across programs and year levels. The data was analyzed using descriptive and inferential statistics through Jamovi software. The findings revealed that self-regulation and academic satisfaction has an excellent internal consistency making the findings robust and reliable for interpretation. The findings underline the importance of self-directed learning in molding students' academic experiences. Students who actively plan, monitor, and manage their learning are more likely to be satisfied with their academic environment, demonstrating the value of teaching and promoting these skills in educational environments. The study has important implications for educators, politicians, and academics interested in improving self-regulation and academic satisfaction.

Keywords: regression analysis; education; psychology; pedagogy

1. Introduction

The relationship between students' self-regulation and their academic satisfaction is somewhat complex and subjective (Ejubović & Puška, 2019), thus hard to analyze. Self-regulation involves a multitude of cognitive, emotional, and behavioral processes in the learners' repertoire, utilizing tactics tailored to their and context-specific needs. However, according to Mulaudzi (2023), academic satisfaction is determined by the quality of teaching, peer relations, and support offered by the institution, hence difficult to control for in order to identify the effect of self-regulation. Measurement instruments such as self-report can also introduce bias since students might not give a genuine indication of their levels of self-regulation or academic satisfaction. In addition, Honicke and Broadbent (2016) argued that definitions and evaluations of academic satisfaction by students also introduce the complexity of differences in measurements.

In addition, self-regulation has been found to be a positive predictor of academic achievement and satisfaction with learning (de La Fuente et al., 2014). Studies suggest that self-regulation is composed of cognitive, emotional, and behavioral strategies that allow students to control their learning effectively. These include goal setting, monitoring progress, and adjusting approaches among others, which are very important for improving academic performance and satisfaction with the learning experience (Kenney & Newcombe, 2017). The higher levels of self-regulation are related to greater satisfaction with learning, higher reflective learning practice, and better procedural and attitudinal outcomes. In romantic relationships, self-regulation is a significant correlate of relationship satisfaction for both men and women (Ferguson & Karantzas, 2022). Indeed, Research indicates that learners who actively participate in self-regulation practices, including goal-setting, time management, and self-

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evaluation, frequently report elevated levels of academic satisfaction, as they are more proficient in overcoming challenges and achieving their academic objectives (Pintrich, 2004). Similarly, Villavicencio and Bernardo (2013) demonstrated that self-regulation positively predicted academic achievement, with positive emotions like enjoyment and pride moderating this relationship. Students reporting higher levels of these emotions showed stronger positive associations between self-regulation and grades.

Additionally, self-regulation is a collection of abilities that students develop over time. To enhance these skills, it is essential for students to consistently engage in self-regulation practice. Over the last thirty years, the comprehension and advancement of self-regulated learning have become a significant focus within the field of learning research (Bembenutty, 2011; Dinsmore et al., 2008; Hacker et al., 2009; Schunk & Zimmerman, 2008; Winne & Perry, 2000; Zimmerman and Schunk, 2011). Other studies elucidate that self-regulation encompasses thoughts, feelings, and actions that are self-generated and organized to improve a student's motivation and learning. Students who can manage their emotions and behavior can interact more easily with others and adapt to various daily tasks (Kenney & Newcombe, 2017). In addition, other study also found that internal goals and a strong conviction in one's academic capabilities contribute positively to self-regulation, whereas external goals do not have the same effect on self-regulatory skills (Cho & Shen, 2013).

On the other hand, Pintrich, 2000; Zimmerman, 2002 stated that academic satisfaction is defined as the degree to which students perceive satisfaction and fulfillment with their educational experiences, including their relationships, educational setting, and individual accomplishments. In any case, not a significant number of students are self-regulated to the fullest extent of their capabilities; however, those who exhibit a greater degree of academic satisfaction and are capable of assimilating more knowledge. Kuh, Kinzie, Buckley, Bridges, and Hayek (2006) suggest that schools that provide comprehensive academic support, mentorship, and opportunities for intellectual growth contribute to greater levels of student satisfaction. In addition, Djudin, (2018), Ezurike and Ayo-Vaughan (2020) stated that student-centered approaches, such as direct instruction and interactive methods, generally result in elevated levels of satisfaction and academic achievement when contrasted with conventional lecture-based methods. Terenzini and Pascarella (1994) have found that academic satisfaction is affected by the perception of the students towards the learning environment, quality of instruction, and their own success in academics. Academic satisfaction goes beyond grades and encompasses how well students feel their learning environment meets their needs and aligns with their expectations (Cuario et al., 2024). Studies indicate that students with higher academic satisfaction are more engaged, motivated, and likely to persist in their studies. Factors contributing to academic satisfaction include quality of instruction, supportive faculty relationships, relevance of the curriculum, and a conducive learning atmosphere (Kuh et al, 2006; Obenza et al., 2024).

Notwithstanding the recognized significance of self-regulation within academic environments, a deficiency persists in comprehending how particular self-regulatory techniques directly influence students' perceptions of their academic satisfaction. While previous studies have explored the general relationship between self-regulation and academic achievement (Zimmerman, 2013). Fewer have focused on the subtle ways in which these practices contribute to students' subjective experiences of satisfaction within their academic environments specifically in the context of university students in Davao City, Philippines. This research seeks to address this gap by examining how different dimensions of self-regulation: such as, help-seeking, effort regulation, goal-setting, managing physical environment, and self-study strategies which contribute to students' overall academic satisfaction.

Hypothesis

The hypothesis will be tested at 0.05 level of significance.

H_0: There is no significant relationship between self-regulation utilization and academic satisfaction.

2. Theoretical Framework

This study was anchored on the "social cognitive theory of self-regulation" by Albert Bandura in 1991 which describes that the ongoing activity of self-influence is widely driven and regulated by human actions. Additionally, Bandura (1991) explains self-regulation as a multifaceted process incorporating various cognitive mechanisms, such as self-monitoring, standard setting, evaluative judgment, self-assessment, and emotional response. This

framework highlights the impact of social influences on the development of self-regulation skills, illustrating how personal and environmental factors dynamically interact within social cognitive theory. Together, these elements underscore the role of self-regulation in enabling students to effectively manage their learning processes and academic outcomes.

According to Mithaug (1993), self-regulation theory explains how people adjust their actions to achieve maximum benefits and reach desired goals in their environments. This theory extends beyond traditional adaptation models by including problem-solving processes that support effective adjustments and benefit optimization. It connects self-regulation with concepts like skill, intelligence, and self-determination, illustrating how these elements support personal growth and goal achievement. Additionally, Al Fadda (2019) found a strong, positive correlation between self-regulation and course grades, as well as between verbal ability and course grades. Delen and Liew (2016) emphasize that self-regulation, self-direction, motivation, and engagement are crucial for achieving optimal learning performance.

3. Materials and Methods

3.1. Research Design

This study adopts a quantitative, correlational approach. Correlational research is appropriate when the objective is to investigate relationships among variables without manipulating them, allowing researchers to identify potential associations (Creswell, 2014; Johnson & Christensen, 2020). The purpose of this study is to ascertain whether a substantial relationship exists between self-regulation strategies and academic satisfaction among students. A cross-sectional survey design will be used, as it enables data collection at a single point in time, ideal for examining current levels of self-regulation and satisfaction (Fraenkel et al., 2012).

3.2. Respondents and Sampling Technique

Two hundred five students from The University of Mindanao participated in the study as respondents. The respondents are from different programs and different year levels. Stratified random sampling was employed to select the students for this study. The volunteers were selected through stratified random sampling. This methodology ensures representation across various subgroups by initially categorizing the target population into strata and subsequently randomly sampling from each stratum (Iliyasu & Etikan, 2021). This technique aids in acquiring a representative sample from a diverse population.

3.3. Instruments and Data Gathering

This study used a tool developed with the framework provided by Kocdar, Karadeniz, Bozkurt, and Buyuk (2018) to create a dependable tool for assessing self-regulation abilities in college students engaged in self-paced open, and distance learning settings. Academic satisfaction was evaluated through the tool developed by Fieger (2012). The tool was constructed as a Likert-scale questionnaire to measure the central elements of self-regulation, namely effort regulation, help-seeking, goal-setting, managing physical environment, and self-study strategies. The survey data was collected via an online survey distributed to students across all departments. Participants have been given two weeks to complete the survey, a reminder was sent one week after it was distributed to encourage responses. Descriptive statistics and the Cronbach's alpha test are used to evaluate the data in order to determine the instrument's internal consistency and reliability and to obtain knowledge about self-regulation techniques in distant learning.

3.4. Data Analysis

Jamovi Statistical Software was used to analyze the data for this investigation. which included Descriptive Statistics to describe the responses of participants-an overview of distribution and central tendency of the dataset. This step allowed understanding of distribution and central tendencies of the responses, setting the stage for further analysis. Subsequently, through the use of Pearson correlation coefficients, the associations of self-regulation with academic satisfaction were explored along strengths and directions of these relationships.

The findings of the statistical analysis were displayed through Simple Linear regression values for the quantitative variables. Statistical significance was determined at $p<0.05$, indicating that any observed relationships were unlikely to be due to random chance. This threshold supports the interpretation of meaningful associations within the data, ensuring rigor in the analysis. By examining these correlations, the study aims to provide insights into

how self-regulation strategies may relate to students' academic satisfaction.

4. Results and Discussion

4.1. Reliability and Validity Checks

Validity assessments are essential to confirm the strength of the correlation between actual data and model outcomes, setting them apart from other statistics inferred from spatial measurements (Mayer et al. 1994). Consequently, validity ensures that the evaluation truly reflects what it purports to assess. Erroneous statistical methods or overlooking regression prerequisites may lead to flawed validity evaluations, as demonstrated in the re-examination of the Ability Emotional Intelligence Measure (Antonakis & Dietz, 2011).

Moreover, Prior to evaluating the data, all possible concerns regarding specific items were resolved to improve the research tool. Table 1 depicts the authenticity and dependability of the measurement framework employed in the investigation. The assessment was conducted employing the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, Bartlett's test, and reliability test.

Table 1. Assumption checks.

Bartlett's test of sphericity		
χ^2	**df**	**p**
7331	1176	<.001
KMO measure of sampling adequacy	**MSA**	
Overall	0.915	
	Cronbach's α	**McDonald's ω**
Self-regulation utilization	0.921	0.925
Academic satisfaction	0.958	0.958

Moreover, to conduct effective factor analysis, it is essential to achieve a notable Bartlett's Test ($p < 0.05$) alongside a KMO score exceeding 0.8 to identify underlying factors. These prerequisites ensure that the data structure is suitable for the analysis, facilitating significant interpretation of the results (Kant, 2023; Li & Zheng, 2020; Nugraha et al., 2024). In addition, as stated in the table 1 it shows that the Bartlett's Test of Sphericity (χ^2 (1176) = 7331, $p < .001$) and the KMO measure of sampling adequacy (0.915) It verifies that the dataset is exceptionally apt for factor analysis. These findings demonstrate that the interrelationships among variables are adequate for multivariate analysis, affirming the suitability of following statistical methods.

Furthermore, while Cronbach's alpha and McDonald's omega are both scale reliability metrics, their optimum values and uses differ. Cronbach's alpha and McDonald's omega are both effective dependability indicators, with optimal values of 0.70 or greater (Badenes-Ribera et al., 2022; Bonniga & Saraswathi, 2020). While alpha is simpler to calculate, omega may yield a more accurate dependability estimate in some circumstances, notably when tau-equivalence assumptions are not satisfied (Orçan, 2023). In addition, as shown in table 1 the scales for self-regulation utilization (Cronbach's $\alpha = 0.921$; McDonald's $\omega = 0.925$) and academic satisfaction (Cronbach's $\alpha = 0.958$; McDonald's $\omega = 0.958$) demonstrate excellent internal consistency as the study has 200 respondents. These reliability measures indicate that the items in the scales consistently capture the constructs, making the findings robust and reliable for interpretation.

Factor loading is an important notion in factor analysis, since it represents the relationship between observable variables and their underlying latent components. It reveals how much a variable contributes to a factor, with greater loadings implying a more significant link. Factor loadings indicate how much variance in observable variables is explained by latent factors. Higher loadings often imply that a factor accounts for a considerable percentage of the variation in the data (Peterson, 2000; Finch, 2020). In factor analysis, the optimal value for factor loadings is often more than 0.3, indicating a significant link between the variable and the factor (Peterson, 2000). In factor analysis, small factor loadings, especially those less than 0.2, can present difficulties and compromise the dependability and clarity of the findings (Petras & Meiser, 2023).

However, in the result in table 2 all factors exhibit statistically significant loadings ($p < .001$), with estimates exceeding 0.5 in most cases. For example, items under Self-Regulation

Utilization-Goal Setting (SRUGS1, loading = 0.777) and Academic Satisfaction-Teaching (ASA5, loading = 0.726) demonstrate strong alignment with their respective factors. These high loadings validate the construct representation, indicating that the items effectively measure the intended dimensions of self-regulation utilization and academic satisfaction. Despite being comparatively lower than others, several indicators, such SRUMPE3 (0.471) and SRUSSS4 (0.518), are nevertheless over the minimal allowed value, guaranteeing their significant inclusion in the factor structure. Their reliability is further confirmed by the statistical significance of all indicators ($p < .001$), which is backed by their high Z-values and standard errors.

Table 2. Factor loadings.

Factor	Indicator	Estimate	SE	Z	p
Goal setting	SRUGS1	0.777	0.057	13.530	<.001
	SRUGS2	0.713	0.053	13.460	<.001
	SRUGS3	0.759	0.055	13.830	<.001
	SRUGS4	0.718	0.055	13.010	<.001
	SRUGS5	0.631	0.058	10.880	<.001
Help-seeking	SRUHS1	0.823	0.075	11.030	<.001
	SRUHS2	0.762	0.081	9.400	<.001
	SRUHS3	0.785	0.072	10.900	<.001
	SRUHS4	0.830	0.081	10.290	<.001
	SRUHS5	0.580	0.065	8.920	<.001
	SRUHS6	0.699	0.061	11.390	<.001
	SRUHS7	0.809	0.076	10.670	<.001
	SRUHS8	0.688	0.064	10.700	<.001
	SRUHS9	0.671	0.075	8.930	<.001
Self-study strategies	SRUSSS1	0.599	0.056	10.640	<.001
	SRUSSS2	0.586	0.062	9.490	<.001
	SRUSSS3	0.578	0.055	10.580	<.001
	SRUSSS4	0.518	0.049	10.660	<.001
	SRUSSS5	0.603	0.067	8.980	<.001
	SRUSSS6	0.675	0.054	12.570	<.001
	SRUSSS7	0.545	0.052	10.450	<.001
	SRUSSS8	0.519	0.053	9.750	<.001
Managing physical environment	SRUMPE1	0.525	0.035	15.170	<.001
	SRUMPE2	0.530	0.034	15.610	<.001
	SRUMPE3	0.471	0.057	8.260	<.001
	SRUMPE4	0.557	0.044	12.740	<.001
	SRUMPE5	0.548	0.050	11.070	<.001
Effort regulation	SRUER1	0.569	0.060	9.550	<.001
	SRUER2	0.652	0.056	11.680	<.001
Teaching	AST1	0.606	0.050	12.250	<.001
	AST2	0.679	0.052	12.970	<.001
	AST3	0.608	0.047	13.040	<.001
	AST4	0.676	0.050	13.620	<.001
	AST5	0.714	0.048	14.750	<.001
	AST6	0.717	0.051	14.060	<.001
Assessment	ASA1	0.643	0.054	11.990	<.001
	ASA2	0.659	0.047	13.990	<.001
	ASA3	0.692	0.047	14.610	<.001
	ASA4	0.680	0.059	11.480	<.001
	ASA5	0.726	0.050	14.400	<.001
Learning experience	ASLE1	0.657	0.047	14.090	<.001
	ASLE2	0.661	0.047	14.160	<.001
	ASLE3	0.706	0.049	14.470	<.001
	ASLE4	0.638	0.045	14.210	<.001
	ASLE5	0.705	0.049	14.270	<.001
	ASLE6	0.725	0.046	15.810	<.001

	ASLE7	0.716	0.045	16.040	<.001
	ASLE8	0.704	0.046	15.170	<.001
Overall satisfaction	ASOS1	0.743	0.037	20.210	<.001

4.2. Descriptive Statistics

Table 3 displays the average and additional statistical measures of the main variables collected and analyzed from the 200 completed responses. The mean scores for self-regulation utilization subdomains suggest varying levels of engagement:

Managing physical environment (M = 4.58, SD = 0.58) reflects a high level of student effort in creating conducive learning spaces. Students' levels of involvement are greatly impacted by how they view their educational environment, which includes elements like classroom dynamics and teacher assistance. Students' self-regulation techniques may be impacted by these views, which may have an impact on their involvement and academic achievement (Zhou et al., 2021; Wang & Holcombe, 2010; Yerdelen & Sungur, 2018). Effort regulation (M = 4.04, SD = 0.73) and Self-study strategies (M = 3.99, SD = 0.62) also scored high, indicating consistent application of self-regulated learning techniques. On the other hand, effective effort management increases the likelihood that students will interact deeply with the course materials, which will improve their performance (Wolters, 1999; Kim et al., 2015; Cho & Shen, 2013). This means that the University of Mindanao students is consistent, and they engage deeply with learning materials to enhance their academic performance.

Goal setting (M = 3.71, SD =0.77) scored high, it suggests that the student at University of Mindanao has good engagement with goal-setting behaviors. Students that have mastery-approach goals are more likely to be engaged in their studies. According to Zhang, Guan, Ahmed, Jobe, and Ahmed (2022), these objectives have a favorable impact on participation through academic self-efficacy and the perceived school climate. However, compared to the other indicators, goal setting it's on the lower end of the "High" range it means that the University of Mindanao students need a room for improvement. Help-seeking (M = 3.60, SD = 0.79) scored slightly lower, suggesting room for improvement in students' willingness to seek assistance. Asking for help is a self-control tactic that enhances academic performance. It is associated with self-efficacy, as students who have a greater level of self-efficacy are more likely to seek assistance (Sun et al., 2018; Won et al., 2019). This means that University of Mindanao students need to improve their engagement to have a better result in their academic achievement. Overall, the average degree of self-regulation across all subdomains is represented by self-regulation utilization (M = 3.98, SD = 0.51). According to the "High" rating, University of Mindanao students typically exhibit excellent self-control. Participants' self-regulation actions are comparatively consistent, as indicated by the smaller SD (0.51) when compared to other variables.

Table 3. Descriptive statistics.

Indicator	N	Mean	SD	Description
Goal setting	205	3.71	0.77	High
Help seeking	205	3.60	0.79	High
Self-study strategies	205.00	3.99	0.62	High
Managing physical	205.00	4.58	0.58	Very High
Self-regulation utilization	205.00	3.98	0.51	High
Teaching	205.00	4.21	0.70	Very High
Assessment	203.00	3.97	0.73	High
Learning experience	204.00	4.15	0.71	High
Overall satisfaction	203.00	4.11	0.75	High
Academic satisfaction	202.00	4.11	0.62	High

On the other hand, academic satisfaction subdomains reveal overall high satisfaction, particularly in teaching (M = 4.21, SD = 0.70) and learning experiences (M = 4.15, SD = 0.71). These findings suggest that students perceive their academic environment positively, likely contributing to their overall satisfaction (M = 4.11, SD = 0.62). Student participation is significantly shaped by the perceived backing of educators in various aspects, including behavioral, cognitive, and emotional involvement. Strong connections between pupils and instructors are crucial for enhancing student participation and fulfillment (Tao et al., 2022; Lunkina et al., 2023; Guo et al., 2023). Despite remaining "High", assessment had a lower

score than teaching and other academic satisfaction metrics (M = 3.97, SD = 0.73). This could suggest that the grading criteria are unclear or that the evaluation techniques need to be improved. Additionally, academic satisfaction (Mean = 4.11, SD = 0.62), which has a "High" description like overall satisfaction, shows that University of Mindanao students feel very positively about their academic experiences and accomplishments. The majority of people appear to be equally satisfied, as indicated by the lower standard deviation (SD = 0.62), which indicates less variety.

4.3. Regression Analysis

In table 4 the regression model demonstrates a strong fit with R = 0.683, indicating a moderate to strong correlation between self-regulation utilization and academic satisfaction. The coefficient of determination, $R^2 = 0.466$, reveals that 46.6% of the variance in academic satisfaction is explained by self-regulation utilization. This suggests that self-regulation is not only a critical component of academic success but also a significant predictor of students' overall satisfaction with their educational experience. However, the remaining unexplained variance (53.4%) implies that other factors, such as teaching quality, peer support, or institutional resources, may also influence academic satisfaction and should be explored in future research. In addition, the adjusted R^2 value (0.463) confirms the robustness of this explanatory power, even after accounting for potential overfitting. The overall F-test result ($F(1,000) = 175.000$, $p < .001$) confirms that the model is statistically significant, and the predictor (self-regulation utilization) contributes meaningfully to the variance in academic satisfaction.

Table 4. Regression analysis: Model fit measures, omnibus ANOVA test, and model coefficients – academic satisfaction.

Model	R	R^2	Adjusted R^2	F	df1	df2	p
1.000	0.683	0.466	0.463	175.000	1.000	200.000	<.001
	Sum of Squares	**df**	**Mean Square**	**F**	**p**		
Self-Regulation Utilization	35.600	1.000	35.584	175.000	<.001		
Predictor	**Estimate**	**SE**	**t**	**p**			
Intercept	0.828	0.251	3.300	0.001			
Self-Regulation Utilization	0.825	0.063	13.210	<.001			

Moreover, the results of the ANOVA analysis further reinforce the model's validity, with a significant F-statistic ($F = 175.000$, $p < .001$). This suggests that the variance explained by the model is significantly greater than the variance left unexplained, providing strong evidence for the relationship between self-regulation utilization and academic satisfaction. On the other hand, the intercept of the result in table 4 (β_0) is 0.828 ($p = .001$), suggesting that in the absence of self-regulation utilization, academic satisfaction has a baseline value of 0.828. While the regression coefficient for self-regulation utilization (β_1) is 0.825 ($p < .001$), indicating a positive and significant relationship. For every one-unit increase in self-regulation utilization, academic satisfaction increases by 0.825 units, holding other factors constant.

4.4. Theoretical Implications

The findings of the study have practical implications for educators and academic institutions. In enhancing the self-regulation skills of university students, there are programs designed to improve students' self-regulation skills, such as workshops on goal setting, time management, and help-seeking, can have a direct impact on their academic satisfaction. As stated by de La Fuente, Sander, Kauffman, and Soylu (2020), self-regulation and external regulation work together to foster a deep learning approach, which raises academic accomplishment and pleasure.

What's more, Institutions should prioritize personalized interventions that help students leverage self-regulation strategies effectively, especially those struggling with time management or environmental structuring. By giving them the skills and self-assurance they need to successfully manage their learning, personalized support can increase students' motivation and sense of self-efficacy. This is especially advantageous in settings where students must learn on their own (Sava et al., 2020; Baars et al., 2022). In addition, teachers also can integrate self-regulation strategies into their pedagogy, such as providing scaffolding for goal-setting exercises or encouraging reflective practices, to enhance student satisfaction. According to Wajahat and Zia (2022), elevated teaching competencies are directly associated with greater student satisfaction. Educators who exhibit robust competencies are capable of

positively affecting students' learning performance, thereby further improving satisfaction.

This study adds to the theoretical discussion about the relationship between Self-Regulation Utilization and Academic Satisfaction among Students, as well as highlighting the crucial roles of goal setting, help-seeking, effort regulation, managing physical environment, and self-study strategies.

Moreover, the regression results highlight a strong and positive relationship between self-regulation utilization and academic satisfaction among students. The significant beta coefficient ($\beta = 0.825$, $p < .001$) underscores the critical role of self-regulated learning practices in enhancing students' academic experiences. The findings align with Zimmerman's (2002) model of self-regulated learning, which posits that students who actively plan, monitor, and regulate their learning processes are more likely to achieve higher levels of academic satisfaction.

5. Conclusions

In conclusion, the results of this research underscore the crucial role that regression analysis validates, indicating that the application of self-regulation is a key and influential predictor of academic satisfaction. By nurturing self-regulation abilities among learners, educational institutions can elevate academic experiences and satisfaction, thus contributing to enhanced learning outcomes and retention rates. These results offer significant perspectives for educators, administrators, and policymakers in formulating approaches to maximize student achievement.

On the other hand, Self-regulation is a significant predictor of academic satisfaction due to its multifaceted impact on learning processes and outcomes. In this case, self-regulation equips students with the essential skills to manage their learning processes, engage in more meaningful academic activities, and regulate their emotions. These factors collectively contribute to a more fulfilling and satisfying academic experience. Additionally, the hypothesis of the study is rejected because the data demonstrated that the association between these variables is statistically significant, suggesting that the utilization of self-regulation is indeed correlated with academic satisfaction. Fundamentally, the results refuted the hypothesis, resulting in its rejection.

While the regression model demonstrates a strong relationship between self-regulation utilization and academic satisfaction, the unexplained variance suggests that additional predictors should be examined. Future studies could include variables such as intrinsic motivation, emotional intelligence, and institutional factors to develop a more comprehensive model. Moreover, longitudinal studies could explore how self-regulation evolves over time and its sustained impact on satisfaction.

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References

Al Fadda, H. (2019). The Relationship between Self-Regulations and Online Learning in an ESL Blended Learning Context. *English Language Teaching, 12*(6), 87-93. https://doi.org/10.5539/elt.v12n6p87

Antonakis, J., & Dietz, J. (2011). Looking for validity or testing it? The perils of stepwise regression, extreme-scores analysis, heteroscedasticity, and measurement error. *Personality and Individual Differences, 50*, 409-415. https://doi.org/10.1016/J.PAID.2010.09.014

Baars, M., Khare, S., & Ridderstap, L. (2022). Exploring Students' Use of a Mobile Application to Support Their Self-Regulated Learning Processes. *Frontiers in Psychology, 13*. https://doi.org/10.3389/fpsyg.2022.793002

Badenes-Ribera, L., Duro-García, C., López-Ibáñez, C., Martí-Vilar, M., & Sánchez-Meca, J. (2022). The Adult Prosocialness Behavior Scale: A reliability generalization meta-analysis. *International Journal of Behavioral Development, 47*(1), 59-71. https://doi.org/10.1177/01650254221128280

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes, 50*(2), 248-287. https://doi.org/10.1016/0749-5978(91)90022-L

Bembenutty, H. (2011). *Self-regulated learning: New directions for teaching and learning.* Wiley.

Bonniga, R., & Saraswathi, A. B. (2020). Literature Review of Cronbachalpha Coefficient And Mcdonald's Omega Coefficient (2020). *European Journal of Molecular & Clinical Medicine, 7*(6). DOI: 10.13140/RG.2.2.35489.53603

Cho, M.-H., & Shen, D. (2013). Self-regulation in online learning. *Distance Education, 34*(3), 290–301. https://doi.org/10.1080/01587919.2013.835770

Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches* (4th ed.). Sage.
Cuario, M. J. P., Obenza, B., Obenza, B. N., Sumatra, K. P., & Baradio, D. G. (2024). Assessing the Effectiveness of Instrumental and Lyrical Music in Developing Reading Comprehension. *EIKI Journal of Effective Teaching Methods, 2*(3). https://doi.org/10.59652/jetm.v2i3.266
de La Fuente, J., Sander, P., Kauffman, D., & Soylu, M. (2020). Differential Effects of Self- vs. External-Regulation on Learning Approaches, Academic Achievement, and Satisfaction in Undergraduate Students. *Frontiers in Psychology, 11*. https://doi.org/10.3389/fpsyg.2020.543884
de La Fuente, J., Sevillano, L. Z., Peralta, F. J., & López, M. (2014). Personal Self-Regulation, Academic Achievement, and Satisfaction of Learning (PRODUCT). *International Journal of Developmental and Educational Psychology Revista INFAD De Psicología, 4*(1), 187. https://doi.org/10.17060/ijodaep.2014.n1.v4.602
Delen, E. & Liew, J. (2016). The Use of Interactive Environments to Promote Self-Regulation in Online Learning: A Literature Review. *European Journal of Contemporary Education, 15*(1), 24-33. https://www.learntechlib.org/p/194882/.
Dinsmore, D. L., Alexander, P. A., & Loughlin, S. M. (2008). Focusing the conceptual lens on metacognition, self-regulation, and self-regulated learning. *Educational Psychology Review, 20*(4), 391–409. https://doi.org/10.1007/s10648-008-9083-6
Djudin, T. (2018). The effect of teaching method and lecture program on students' satisfaction rates and academic achievement. *Journal of Education Teaching and Learning, 3*(1), 121. https://doi.org/10.26737/jetl.v3i1.322
Ejubović, A., & Puška, A. (2019). Impact of Self-Regulated Learning on Academic Performance and Satisfaction of Students in the Online Environment. *Knowledge Management & E-Learning, 11*(3), 345–363. https://doi.org/10.34105/j.kmel.2019.11.018
Ezurike, P. C., & Ayo-Vaughan. F. A. (2020). Influence of Teacher-Centered and Student-Centered teaching methods on the academic achievement of Post-Basic Students in Biology in Delta State, Nigeria. *Teacher Education and Curriculum Studies, 5*(3), 120. https://doi.org/10.11648/j.tecs.20200503.21
Ferguson, E., & Karantzas, G. (2022). The roles of self-regulation and partner regulation on romantic relationship quality. *Family process, 62*(1), 406-422. https://doi.org/10.1111/famp.12782
Fieger, P. (2012). Measuring Student Satisfaction from the Student Outcomes Survey. Technical Paper. National Centre for Vocational Education Research.
Finch, W. (2020). *Introduction to factor analysis. In Introduction to factor analysis*. SAGE Publications, Inc. https://doi.org/10.4135/9781544339900
Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education* (8th ed.). Mc Graw HIll.
Guo, Q., Samsudin, S., Yang, X., Gao, J., Ramlan, M. A., Abdullah, B., & Farizan, N. H. (2023). Relationship between Perceived Teacher Support and Student Engagement in Physical Education: A Systematic Review. *Sustainability, 15*(7), 6039. https://doi.org/10.3390/su15076039
Hacker, D. J., Dunlosky, J., & Graesser, A. C. (Eds.). (2009). *Handbook of metacognition in education.* Routledge.
Honicke, T., & Broadbent, J. (2016). *The influence of academic self-efficacy on academic performance: a systematic review* (Version 3). Deakin University.
Iliyasu, R., & Etikan, I. (2021). Comparison of quota sampling and stratified random sampling. *Biometrics & Biostatistics International Journal, 10*(1), 24–27. https://doi.org/10.15406/bbij.2021.10.00326
Johnson, B. and Christensen, L. (2014). Educational Research: Quantitative, Qualitative, and Mixed Approaches. 5th Edition, SAGE Publications, London.
Kant, S. (2023). Analysis of Human Capital Mediation Requirement with Financial Management Practices for Coffee Cooperatives Sustainability in Ethiopia. *Journal of Management and Service Science, 3*(2), 1–12. https://doi.org/10.54060/jmss.2023.50
Kenney, J., & Newcombe, E. (2017). Supporting student self-regulation: In a blended, flipped learning format. In M. Northcote & K. P. Gosselin (Eds.), *Handbook of research on humanizing the distance learning experience* (pp. 392–409). Information Science Reference/IGI Global. https://doi.org/10.4018/978-1-5225-0968-4.ch017
Kim, C., Park, S. W., Cozart, J., & Lee, H. (2015). From motivation to engagement: The role of effort regulation of virtual high school students in mathematics courses. *Journal of Educational Technology & Society, 18*(4), 261–272. https://scholarx.skku.edu/handle/2021.sw.skku/42933
Kocdar, S., Karadeniz, A., Bozkurt, A., & Buyuk, K. (2018). Measuring Self-Regulation in Self-Paced Open and Distance Learning Environments. *The International Review of Research in Open and Distributed Learning, 19*(1). https://doi.org/10.19173/irrodl.v19i1.3255
Kuh, G. D., Kinzie, J. L., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2006). *What Matters to Student Success: A Review of the Literature*, Vol. 8. National Postsecondary Education Cooperative.
Li, F., & Zheng, T. (2020). Study on the factors influencing the study of adolescents in rebellious period. In *Proceedings of 2019 International Conference on Humanities, Management Engineering and Education Technology*. https://www.clausiuspress.com/conference/article/artId/3936.html
Lunkina, M. V., Gordeeva, T. O., Diryugina, E. G., & Pshenichnyuk, D. V. (2023). Teaching quality as predictor of student engagement, well-being and performance. *RUDN Journal of Psychology and Pedagogics, 20*(3), 628–649. https://doi.org/10.22363/2313-1683-2023-20-3-628-649
Mayer, D., Stuart, M., & Swain, A. (1994). Regression of real-world data on model output: An appropriate overall test of validity. *Agricultural Systems, 45*, 93-104. https://doi.org/10.1016/S0308-521X(94)90282-8
Mithaug, D. E. (1993). *Self-regulation theory: How optimal adjustment maximizes gain.* Praeger Publishers/Greenwood Publishing Group.
Mulaudzi, I. C., (2023). Factors Affecting Students' Academic Performance: A Case Study of the University Context. *Journal of Social Science for Policy Implications, 11*(1), 18-26. DOI: 10.15640/10.15640/jsspi.v11n1a3
Nugraha, T., Rodhi, N., & Sari, A. (2024). Analisis Faktor Keterlambatan Pekerjaan Konstruksi Drainase dengan Menggunakan Metode Kaiser Mayer Oklin (KMO). *Jurnal Ilmiah Universitas Batanghari Jambi, 24*(2), 1404-1412. https://doi.org/10.33087/jiubj.v24i2.5296
Obenza, B. N., Caballo, J. H. S., Caangay, R. B. R., Makigod, T. E. C., Almocera, S. M., Bayno, J. L. M., …Tua, A. G. (2024). Analyzing University Students' Attitude and Behavior Toward AI Using the Extended Unified Theory of Acceptance and Use of Technology Model. *American Journal of Applied Statistics and Economics, 3*(1), 99–108. https://doi.org/10.54536/ajase.v3i1.2510

Orçan, F. (2023). Comparison of cronbach's alpha and McDonald's omega for ordinal data: Are they different?. *International Journal of Assessment Tools in Education, 10*(4), 709-722. https://doi.org/10.21449/ijate.1271693

Peterson, R. (2000). A Meta-Analysis of Variance Accounted for and Factor Loadings in Exploratory Factor Analysis. *Marketing Letters, 11*, 261-275. https://doi.org/10.1023/A:1008191211004

Petras, N., & Meiser, T. (2023). Problems of Domain Factors with Small Factor Loadings in Bi-Factor Models. *Multivariate Behavioral Research, 59*, 123 - 147. https://doi.org/10.1080/00273171.2023.2228757

Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich & M. Zeidner (Eds.), *Handbook of Self-regulation: Theory, Research, and Applications* (pp. 451–502). San Diego, CA: Academic Press

Pintrich, P. R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review, 16*(4), 385-407. https://doi.org/10.1007/s10648-004-0006-x

Sava, S., Vîrgă, D., & Palo**ş**, R. (2020). The role of teacher support, students' need satisfaction, and their psychological capital in enhancing students' self-regulated learning. *Studia Psychologica, 62*(1). https://doi.org/10.31577/sp.2020.01.790

Schunk, D. H., & Zimmerman, B. J. (Eds.). (2008). *Motivation and self-regulated learning: Theory, research, and applications*. New York: Lawrence Erlbaum.

Sun, Z., Xie, K., & Anderman, L. (2018). The role of self-regulated learning in students' success in flipped undergraduate math courses. *The Internet and Higher Education, 36*, 41-53. https://doi.org/10.1016/J.IHEDUC.2017.09.003

Tao, Y., Meng, Y., Gao, Z., & Yang, X. (2022). Perceived teacher support, student engagement, and academic achievement: a meta-analysis. *Educational Psychology, 42*, 401-420. https://doi.org/10.1080/01443410.2022.2033168

Terenzini, P. T., & Pascarella, E. T. (1994). Living with myths: Undergraduate education in America. *Change, 26*(1), 28-32.

Villavicencio, F. T., & Bernardo, A. B. (2013). Positive academic emotions moderate the relationship between self-regulation and academic achievement. *The British journal of educational psychology, 83*(Pt 2), 329–340. https://doi.org/10.1111/j.2044-8279.2012.02064.x

Wajahat, A., & Zia, S. (2022). The Moderating Role of Learning Performance on Teaching Competencies and Student Satisfaction. *Reviews of Management Sciences, 4*(1). https://doi.org/10.53909/rms.04.01.094

Wang, M., & Holcombe, R. (2010). Adolescents' Perceptions of School Environment, Engagement, and Academic Achievement in Middle School. *American Educational Research Journal, 47*, 633-662. https://doi.org/10.3102/0002831209361209

Winne, P., & Perry, N. (2000). Measuring self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of Self-Regulation* (pp. 531–566). San Diego, CA: Academic Press.

Wolters, C. (1999). The relation between high school students' motivational regulation and their use of learning strategies, effort, and classroom performance. *Learning and Individual Differences, 11*, 281-299. https://doi.org/10.1016/S1041-6080(99)80004-1

Won, S., Hensley, L., & Wolters, C. (2019). Brief Research Report: Sense of Belonging and Academic Help-Seeking as Self-Regulated Learning. *The Journal of Experimental Education, 89*(1), 112-124. https://doi.org/10.1080/00220973.2019.1703095

Yerdelen, S., & Sungur, S. (2018). Multilevel Investigation of Students' Self-regulation Processes in Learning Science: Classroom Learning Environment and Teacher Effectiveness. *International Journal of Science and Mathematics Education, 17*, 89-110. https://doi.org/10.1007/S10763-018-9921-Z

Zhang, Y., Guan, X., Ahmed, M. Z., Jobe, M. C., & Ahmed, O. (2022). The Association between University Students' Achievement Goal Orientation and Academic Engagement: Examining the Mediating Role of Perceived School Climate and Academic Self-Efficacy. *Sustainability, 14*(10), 6304. https://doi.org/10.3390/su14106304

Zhou, A., Guan, X., Ahmed, M., Ahmed, O., Jobe, M., & Hiramoni, F. (2021). An Analysis of the Influencing Factors of Study Engagement and Its Enlightenment to Education: Role of Perceptions of School Climate and Self-Perception. *Sustainability, 13*(10), 5475. https://doi.org/10.3390/SU13105475

Zimmerman, B. J. (2002). Becoming a Self-Regulated Learner: An Overview. *Theory Into Practice, 41*(2), 64–70. https://doi.org/10.1207/s15430421tip4102_2

Zimmerman, B. J. (2013). From cognitive modeling to self-regulation: A social cognitive career path. *Educational Psychologist, 48*(3), 135–147. https://doi.org/10.1080/00461520.2013.794676

Zimmerman, B. J., & Schunk, D. H. (Eds.). (2011). Self-Regulated Learning and Performance. In B. J. Zimmerman, & D. H. Schunk (Eds.), *Handbook of Self-Regulation of Learning and Performance* (pp. 1-12). Routledge.