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An In-depth Analysis of Factors Influencing Academic Performance Among Students in Politeknik Mukah: A Comprehensive Study

Mohd Zuhair Shahiran Muhammad Najib[1]*

[1]Examination Unit, Politeknik Mukah, KM 7.5 Jalan Oya, 96400, Mukah, Sarawak, Malaysia

*Corresponding author: zuhair@pmu.edu.my
Please provide an **official organisation email** of the corresponding author

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Abstract

Academic performance plays a vital role in student success in higher education. Various personal and external factors impact students' learning outcomes. Recognizing these factors can help enhance educational strategies. At Politeknik Mukah, student achievement is shaped by motivation, teaching quality, learning environment, and academic resources. Understanding these key influences can assist students, educators, and policymakers in creating a more effective learning environment. Despite ongoing efforts to improve education quality, many students continue to face challenges that hinder their academic performance. Factors such as self-efficacy, the quality of lecturers, the physical learning environment, and the availability of academic resources play a significant role in shaping student success. This research aimed to identify the factors influencing academic performance among students at Politeknik Mukah. The distributed questionnaire focused on four key aspects believed to affect student success: self-efficacy, the quality of lecturers, the physical learning environment and facilities, and academic resources. The study involved approximately 327 respondents, all of whom were students at Politeknik Mukah during Session II 2023/2024. The findings revealed that all four factors had significant positive effects on students' academic performance. This research may assist students, lecturers, and management in addressing challenges to enhance educational achievement.

Keywords: - Self-efficacy, qualified lecturer, physical learning classes and facilities and academic resources

1. Introduction

The academic performance of students and the graduation rate of an institution have consistently been crucial subjects of inquiry for higher education learning centers. It is essential to identify the factors influencing student academic performance to ensure timely and effective support for those in need (Leo et al., 2021).

The primary measure employed to evaluate the caliber of university students is academic achievement. Universities utilize core criteria to assess and ensure the quality of teaching and learning, as well as to appraise and select students. Hence, the examination of students' academic accomplishments holds significant importance in fostering student development and enhancing the quality of higher education. Nevertheless, student performance is intricately influenced by various factors such as the course design, qualified lecturers, physical learning classes, Academic resources and others that may potentially impact their academic success. The analysis reveals that college students' academic performance is significantly influenced by educators' teaching effectiveness, study habits, distraction factors, and family environment (Arora & Singh, 2017).

Achieving academic excellence and securing positive grades are crucial objectives across all educational levels. Identifying the factors that influence students' academic advancement stands as a primary focus for researchers and education sectors.

Performance is the outcome of a pursuit that can be conceived, accomplished, and gratified, attained through diligent effort, both individually and within organizations. On the other hand, learning achievement is defined as the result of assessing performance expressed through numerical values or symbols, encompassing the progression of student learning outcomes over a specific period. This implies that performance serves as the culmination of achieved learning outcomes, offering a reflection of the students' success in meeting the stipulated learning objectives. These learning outcomes encompass cognitive (knowledge), affective (attitude), and psychomotor (behavioral) aspects. The evaluation of learning achievement or performance can be conducted through assessments designed to measure the attainment of learning outcomes (Rafiola et al., 2020).

Academic performance is the gauge of how well educational objectives are met within the school system. Essentially, it signifies the extent to which students are successfully attaining the intended educational goals and objectives (Okoye et al., 2021).

Forecasting student success remains challenging in the modern, complex landscape of education. Molnár & Kocsis (2024), suggest that academic achievement is influenced by a combination of cognitive abilities, prior knowledge, motivation, learning strategies, and external factors like socioeconomic status and support systems. The complex interaction among these elements makes the prediction process more challenging. However, comprehensive and high-quality data are required for accurate predictions. Nevertheless, the development of reliable predictive models can be hindered by inconsistencies, missing information, and limited access to relevant datasets (Realinho et al., 2022). Previous studies and current prediction techniques remain inadequate in pinpointing the most effective methodologies for anticipating the variables shaping student outcomes in tertiary education. Consequently, there exists a discernible necessity to pinpoint the factors significantly shaping student performance. To address this gap, the researcher utilized data from Mukah Polytechnic Students as a sample to discern the traits impacting student achievement.

2. Literature Review

2.1 Self-Efficacy

Academic achievement is significantly influenced by a crucial element known as academic self-efficacy. It refers to a student's confidence in their capability to excel academically, encompassing the successful completion of assignments and understanding learning materials (Hayat et al., 2020).

Self-efficacy beliefs contribute to individuals achieving excellence by fostering increased dedication, effort, and persistence. Individuals with high levels of self-efficacy tend to attribute their failures to insufficient effort rather than inadequate ability, whereas those with low self-efficacy attribute their failures to their perceived lack of ability. Consequently, self-efficacy can impact task selection, and the level of persistence exhibited during their completion. Essentially, students with low self-efficacy are more prone to fear undertaking tasks, leading to avoidance, procrastination, and early abandonment (Hayat et al., 2020).

Those possessing elevated self-efficacy are inclined to depend on their own abilities to solve intricate problems, demonstrating increased patience, exertion, and perseverance in overcoming challenges. The role of self-efficacy in influencing academic achievement in children is noteworthy. Chemers and Garcia found that students' self-efficacy during their initial year in university serves as a substantial predictor of their subsequent performance (Hayat et al., 2020).

In a study conducted by Mohsen (2017), it was revealed that academic self-efficacy plays a substantial role in enhancing academic performance among a sample of 214 university students. Additional research underscores the significant influence of academic self-efficacy on aspects such as student learning, motivation, and overall performance.

Self-efficacy (SE) can be enhanced through experiences of mastery, observing success, and receiving social persuasion, such as encouragement. Furthermore, physiological factors are believed to exert an influence on self-efficacy, where perceptions of pain, fatigue, and fear can adversely affect one's self-esteem (Yokoyama, 2019).

According to a previous study, individuals can reach their maximum potential when their self-concept aligns with their thoughts, feelings, and actions (Cavilla, 2017; Al Kurdi et al., 2021). The level of self-efficacy plays a crucial role in contributing to academic success. Research indicates that students with high academic self-efficacy tend to achieve better academic performance. According to the previous study, self-efficacy as "one's belief in their capability to produce designated levels of performance for events that affect their lives, which determines how people feel, think, motivate themselves, and behave." It is noted that beliefs can have a greater impact on task outcomes than capabilities because belief significantly influences effort (Khan, 2023).

According to the previous study, academic self-efficacy emerged as a significant determinant of academic performance. The participants in the study were first-year college students who completed surveys at the conclusion of their initial quarter and again at the end of their academic year. The researcher discovered a positive correlation between high academic self-efficacy and elevated grade point averages (GPAs). Furthermore, students with higher high school GPAs exhibited greater academic self-efficacy, academic expectations, and overall academic performance in college, in contrast to students with lower high school GPAs (Khan, 2023).

While students' self-efficacy profoundly impacts their academic achievements, the pivotal role of lecturers in orchestrating enriching learning experiences remains indispensable. The pedagogical prowess and adeptness of educators, coupled with the provision of state-of-the-art

learning facilities, serve as fundamental pillars in refining students' intellectual growth, fortifying their competencies, and equipping them to navigate the complexities of future challenges with resilience and excellence.

2.2 Qualified Lecturer

The competence of lecturers and the availability of comprehensive learning facilities on campus play a crucial role in shaping the quality of graduates. In this setting, lecturers serve as catalysts, propelling scientific and academic pursuits forward. The performance of lecturers directly influences the community's expectations regarding the quality of college graduates. Universities have a responsibility to produce competent professionals and experts. The aim of higher education is to produce graduates with the ability to work independently, possessing the necessary knowledge, skills, and attitudes to compete effectively in various domains (Khambali et al., 2022).

T. O. Ewetan & O. O. Ewetan (2015) conducted a study investigating the correlation between teachers' experience and students' academic performance. Their research highlighted that the teaching experience of educators plays a crucial role in determining students' academic achievements. Notably, the study found that schools with a higher proportion of teachers boasting over 10 years of teaching experience tended to achieve better results compared to schools where most teachers had 10 years or less of teaching experience.

Additional evidence from the study underscores that the employment of professionally qualified teachers plays a role in influencing the academic performance of students in Anambra State. Teachers with experience and proper training possess a comprehensive understanding of the subjects they teach, along with effective methods to achieve learning objectives. This supports the observation that students instructed by qualified and experienced teachers perform differently compared to those taught by less qualified and relatively inexperienced instructors. These findings are consistent with the research of Kalagbor (2016), T. O. Ewetan & O. O. Ewetan (2018) and Fajar et al. (2019).

2.3 Physical Learning Classes

In the Physical classroom, the Lecturer imparts knowledge or information to the student. The Lecturer prepares the lesson, and students are expected to engage by listening, taking notes, memorizing, and showcasing their understanding through tasks such as filling in blanks or choosing appropriate alternatives during exams (Kaur et al., 2020).

Physical classroom learning offers distinct advantages by providing students with hands-on, structured learning experiences, as opposed to the online learning approach that relies on course books, written lectures, and self-directed activities (Kuliya & Usman, 2021).

In the context provided by Gherheș et al. (2021), physical classroom learning is characterized as teacher-centered, as it is distinctly tailored to the individual learner rather than being solely dependent on teacher instructions and recommendations.

Conventional classroom learning holds certain advantages as it allows students to engage in hands-on, structured learning experiences rather than relying solely on course materials, written lectures, and self-directed activities, which are more characteristic of online learning. Moreover, traditional classrooms provide learners with the immediate opportunity to address any challenges or areas of confusion (Kuliya & Usman, 2021; Yakubu & Dasuki, 2020).

Tratnik et al. (2019) observed significant divergences in student satisfaction levels when evaluating online and face-to-face courses. The study revealed a preference for face-to-face (F2F) instruction, with students expressing higher satisfaction with the course in this mode. When instruction concludes in a face-to-face (F2F) context, it offers real-time feedback to faculty and students regarding the lesson, delivery, and overall learning experience. The ability to interpret a student's body language and non-verbal signals allows faculty to promptly modify their responses, incorporating additional questioning to gain a more comprehensive grasp of the information. Conversely, online education lacks these visual indicators, requiring instructors and students to lean more heavily on written responses or feedback for assignments, discussion boards, or direct queries. Achieving the same level of perception and ease as in an F2F classroom demands more extensive probing and questioning in the online learning environment.

2.4 Facilities and Academic Resources

In contemporary times, technology is displacing various elements, with students showing a pronounced inclination toward utilizing technology and engaging in social networks. Earlier studies have investigated the factors that impact students' academic achievements, as evidenced by research conducted by Raza et al. (2018).

Furthermore, the presence of quality infrastructure serves as a motivating factor for students to enhance their performance (Mehmood et al., 2019; Nuseir et al., 2021). The comfort of students and consequently, their learning capabilities can be influenced by the physical environment. For instances where students find themselves in uncomfortable surroundings, distractions may arise, potentially hindering their ability to learn at a pace comparable to their peers in more comfortable environments (Okoye et al., 2021).

According to Umar & Samuel (2019), their findings revealed a significant impact of institutional facilities on students' academic performance. There is substantial evidence indicating a strong link between educational facilities and students' academic performance. In a study by Gilavand (2016), an examination was conducted on how the learning environment influences students' learning

outcomes. The research involved analyzing data collected through a literature survey on the subject.

Okoye et al. (2021) conducted a study to examine how the facilities environment influences the academic performance among students in Kuala Terengganu, Malaysia. Utilizing regression tests on data derived from respondents, the authors revealed that students with access to adequate facilities and favorable learning environments demonstrated better academic performance compared to their counterparts who had insufficient learning facilities and unfavorable learning conditions.

While previous studies by Imeokparia (2018), Olufemi et al. (2018), Umar & Samuel (2019) and Fajar et al. (2019) have established a correlation between the availability of high-quality facilities and academic performance, there remains a paucity of research examining the nuanced impact of specific facility types on various dimensions of student success. Additionally, limited attention has been given to how students from different socioeconomic backgrounds adapt to facility shortages and the potential mitigating strategies employed by institutions. This study seeks to bridge these gaps by providing a more granular analysis of the role of educational facilities in shaping academic outcomes, thereby offering deeper insights for policymakers and educational institutions.

A theoretical framework in Fig. 1 comprises a set of interrelated principles that elucidate a systematic situation. The framework can explain a phenomenon by identifying the relationships and correlations between relevant variables (Kerlinger,1998). Figure 1 presents a summary of the theoretical framework, highlighting the independent variables of self-efficacy, qualified lecturers, physical learning environments and facilities, and academic resources. The dependent variable, in this context, is the factors influencing academic performance among students at Politeknik Mukah. This theoretical framework suggests that these four factors are correlated with students' academic performance at Politeknik Mukah.

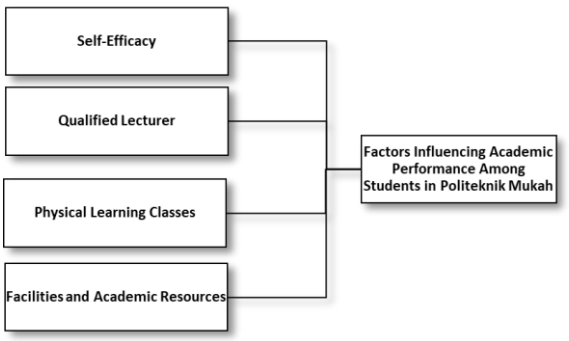

Fig. 1. Framework

3. Methodology

There are diverse approaches for gathering primary data, such as interviews, telephone surveys, and the distribution of questionnaires. Given the extensive number of students involved in this study, the sample size will be notably influenced by its size. Hence, a quantitative research approach utilizing the questionnaire method was selected due to its efficiency in data collection. The questionnaire will be administered using the Google Forms platform and distributed to respondents via the provided link. The questionnaire employed utilizes a Likert scale, ranging from 1 to 5 to gauge agreement levels. It consists of two sections: Part A, dedicated to gathering demographic information from respondents, and Part B, focused on exploring the variables to be tested in the study.

Furthermore, opting for a quantitative approach is deemed more fitting to explore the significant relationships among the variables discussed in the literature review section, such as self-efficay, Physical Learning Classes, Qualified Lecturers, Accommodation and Academic Resources with Academic Performance among Students in Politeknik Mukah.

The individuals selected as respondents will be sourced from the student populace of Politeknik Mukah. Based on data obtained from the Department of Student Affairs and Development (JHEPP) at Politeknik Mukah, the latest enrollment figures for Session II 2023/2024, as of February 2024, are outlined in Table 1.

Table 1. Student population at Politeknik Mukah

Academic Department	Total
Department of Civil Engineering	330
Department of Electrical Engineering	222
Department of Mechanical Engineering	305
The Information & Communication Technology Department	271
Commerce Department	1024
	2152

Probability sampling will be utilized as the sampling technique in this study. Sampling is essential as it's unfeasible to collect data from the entire student population due to its size. The determination of the study's sample size will adhere to the method proposed by Krejcie & Morgan (1970). According to this method, a total of 327 questionnaires will be distributed to students in each academic department, as detailed in the breakdown as in Table 2.

Table 2. Sample size in each academic department of Politeknik Mukah

Academic Department	Total
Department of Civil Engineering	50
Department of Electrical Engineering	34
Department of Mechanical Engineering	46
The Information & Communication Technology Department	41
Commerce Department	156
	327

Breakdowns in Table 2 are derived from the percentage of each academic department's population relative to the total population of Politeknik Mukah. The findings will be analyzed using SPSS statistical software to calculate the mean for each item. The researcher utilized Moidunny

(2009) approach to interpret the mean scores, which is as in T able 3.

Table 3. Interpretation method of mean score

Mean Score	Level
1.00 – 1.80	Very Low
1.81 – 2.60	Low
2.61 – 3.20	Medium
3.21 – 4.20	High
4.21 – 5.00	Very High

Reliability tests were conducted using Cronbach's Alpha, generated by SPSS statistical software. The results indicate that the variables in this study are deemed acceptable and reliable, with values surpassing 0.70, as noted by Adeniran (2019). The reliability of all variables is demonstrated by their respective Cronbach's Alpha values: (1) Self-Efficacy = 0.789, (2) Physical Learning Classes = 0.915, (3) Qualified Lecturers = 0.886, and (4) Accommodation and Academic Resources = 0.760.

4. Findings & Analysis

The outcomes of this study are derived from the data collected through an online questionnaire distributed to 327 respondents, all of whom are students enrolled in diverse academic departments at Politeknik Mukah.

Examining Table 4, it is evident that most respondents fall within the 18-25 age which is recorded 97.9% of the respondent pool. This age distribution aligns with expectations, as Politeknik Mukah's student registration records indicate a predominance of students who have recently completed their Sijil Pelajaran Malaysia (SPM) examination. Regarding religious affiliation, Christians constitute 52% of respondents, followed by Islam representing 43.7%, and other religions comprising 3.4%.

Regarding the gender distribution of respondents, females outnumber males by a margin of 3%. As depicted in Table 3, the distribution of respondents across academic departments was conducted using probability sampling. The researcher has effectively secured respondents in accordance with the pre-determined percentage allocations for each academic department at the outset of the research implementation. Most respondents, totaling 92.7%, report their first university experience. The demographic distribution outlined above provides valuable insights into factors that may influence academic performance. Furthermore, the fact that 92.7% of respondents are experiencing university education for the first time underscores the importance of academic preparedness, transition challenges, and institutional support in determining their overall success. Understanding these demographic factors allows for a more comprehensive analysis of their correlation with academic performance, ultimately informing strategies to enhance student outcomes.

Table 4. Respondents' demography

Item		N	%
Ages	<18	4	1.2
	18-20	171	52.3
	21-25	149	45.6
	>25	3	0.9
Religion	Islam	143	43.7
	Christian	173	52.9
	Hindus	1	0.3
	Buddha	4	1.2
	Others	6	1.9
Gender	Male	160	48.9
	Female	167	51.1
Academic Department	Department of Civil Engineering	50	15.3
	Department of Electrical Engineering	34	10.4
	Department of Mechanical Engineering	46	14.1
	The Information & Communication Technology Department	41	12.5
	Commerce Department	156	47.7
First University Experience	Yes	303	92.7
	No	24	7.3

Based on Table 5, students' self-efficacy towards the Academic performance is high. Academic self-efficacy refers to students' perception of their competence and abilities in completing assigned tasks or activities within an academic context. Essentially, it reflects how students perceive their capabilities concerning academic endeavors. This construction can be assessed through various dimensions of students' academic performance, including their approach to learning, reading comprehension, memory retention, goal orientation, utilization of resources, interactions with peers and teachers, time management skills, exam preparation, and adaptation to the academic environment, among other aspects of the academic sphere. Students exhibiting low self-efficacy are prone to avoiding task completion. Conversely, it can be posited that students possessing greater academic self-efficacy tend to invest more effort and demonstrate increased persistence when encountering challenges in completing assigned tasks. All the items recorded with high scores between 4.00 to 4.19.

Table 5. Self-efficacy

Item	Mean	SD
I do not give up easily when I am faced with a difficult question in my assignment.	4.02	.961
I can do better than my friends in most subjects.	4.00	.854
I pay attention to the lecturer during lessons	4.19	.854
I can follow the lessons easily.	4.02	.827
I study hard for my tests.	4.15	.764

Concurrently, an impressive score of 4.19 is observed for the item indicating that respondents pay attention to the lecturer during the lesson. To assess the impact of Physical Learning Classes on academic performance, a comprehensive summary will be presented in Table 6.

Table 6. Physical learning classes

Item	Mean	SD
I enjoy the physical class because the instructions given do not rely upon the network system.	4.18	.862
I am motivated and concentrated during physical class	4.07	.880
I have easy access to study materials during physical classes.	4.00	.854
Being able to socialize with my peers face-to-face has improved my confidence which eventually improved my academic performance.	4.19	.854
I'm able to participate in class discussions during lesson periods through physical classes which has Improved my academic performance.	4.02	.827
I enjoy physical class because there are no technical problems during the class which has increased my academic Performance.	4.12	.880
During physical class, I was able to have the guidance of lecturers and administrators which has helped me perform better in my academics	4.22	.800

Derived from the data presented in Table 6, the factors associated with Physical Learning Classes significantly impact Academic Performance. The questionnaire indicates that respondents experienced substantial guidance from lecturers and administrators during physical classes, resulting in notably high scores averaging 4.22. In a face-to-face (F2F) instructional setting, continuous and immediate feedback can be readily provided to both faculty and students regarding the lesson, delivery method, and overall learning experience. By observing students' body language and non-verbal signals, instructors can promptly adapt or refine their responses, enabling further inquiry to gain a more comprehensive understanding of students' informational needs. Tratnik et al. (2019) identified notable distinctions in student satisfaction levels between online and face-to-face courses, with students expressing greater satisfaction with F2F courses.

To explore the influence of Qualified Lecturers on students' academic performance, the study's results have been condensed and are outlined in Table 7.

Table 7. Qualified lecturers

Item	Mean	SD
Lecturers' who teach what they studied can teach the subjects in ways that students understand better.	4.15	.785
Our lecturers are extremely good at explaining things to us.	4.15	.764
Professionally-experienced teachers use both theory and practical teaching methods and students learn better under them.	4.26	.794
The Lecturers'used many approach or learning methods that were understandable	4.13	.826

Based on Table 7, the impact of qualified lecturers on students' academic performance is substantial overall. Notably, the item concerning the utilization of both theoretical and practical teaching methods by professionally experienced instructors received a remarkably high score of 4.26. For example, it is posited that lecturers equipped with requisite teaching qualifications, attributes, and competency are likely to outperform those lacking such credentials, as they are adept at employing various teaching techniques and methodologies in fulfilling their primary responsibilities. Thus, effectiveness in performance may be achievable only among those who possess the necessary qualifications, attributes, and competency, as suggested by (Lucky & Yusoff, 2015). To analyze the impact of Accommodation and Academic Resources on students' academic performance, the findings have been compiled and are presented in Table 8.

Table 8. Accommodation and academic resources

Item	Mean	SD
There is no easy access to resources used for learning in a classes.	2.83	.960
The use of technological devices for learning is very limited	3.06	1.044
There is no effective course delivery in due to insufficient academic resources.	2.72	1.006
It is stressful and tedious when learning with insufficient facilities.	3.65	1.160
Due to insufficient academic resources, I was unable to concentrate well during classes.	3.04	1.124
The provision of excellent facilities in educational institutions can impact the academic performance of students	4.02	.961

Derived from the data illustrated in Table 8, the influence of Accommodation and Academic Resources on students' academic performance appears to be moderate. Notably, the question item that garnered the highest score of 4.02 pertained to the provision of excellent facilities in educational institutions can impact the academic performance of students. The question item states that received the lowest score of 2.72 there is no effective delivery due to insufficient academic resources. This requirement stems from the necessity for respondents' opinions to be grounded in their personal experiences or those of their nearest acquaintances.

Table 9. Level of correlation coefficient

Value of correlation coefficient	The meaning
+1	Completely positive correlation
From 0.70 - 0.99	Strong positive association
From 0.50 - 0.69	Average positive correlation
From 0.01 - 0.49	Weak positive correlation
0	Not a positive relationship

Based on Table 10, Multiple Regression Analysis are utilized to examine whether the independent variables under scrutiny can predict or exert a substantial impact on the dependent variable. The outcomes of the regression analysis reveal a notable finding: the independent variable elucidates a significant proportion for 93.9% of the variance observed in the dependent variable (r = .969). This

underscores the substantial contribution of the independent variable, equating to 93.9% of students' academic performance. A strong positive association denotes a one-way relationship between all independent variables and students' academic attainment.

Table 10. Multiple regression analysis

R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change	df1
.969a	.939	.938	.17651	1238.018	4

Upon scrutiny of the histogram in Fig. 2 during the normality test conducted on interview data, an observable resemblance emerges between the distribution curve of the dependent variable and the Regression Standardized Residual, resembling that of a bell-shaped curve or a mountain silhouette. Hence, given the results of the normality test, it is evident that employing regression analysis is appropriate. Consequently, it can be inferred that the observed pattern adheres to a normal distribution.

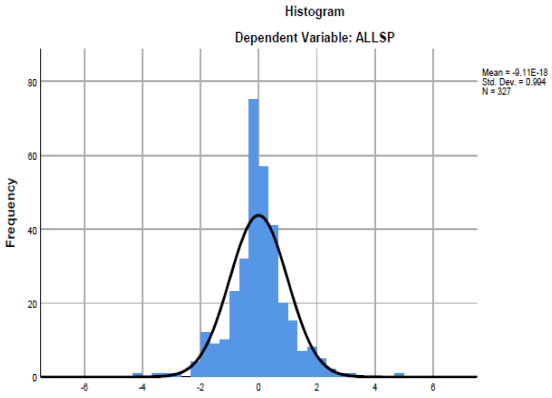

Fig. 2. Regression standardized residual

5. Conclusion and Recommendation

The study's outcomes reveal a compelling association among the four independent variables, signifying their considerable capacity to exert influence on the dependent variable, namely the academic performance of students. The constructive influence of self-efficacy among students may yield a discernible impact on their academic performance. As outlined by Cobo-Rendón et al. (2020), academic self-efficacy pertains to students' perceptions regarding their capability to comprehend and meet the academic requirements imposed upon them. This construction has been consistently associated with enhanced academic performance and increased student retention within the university setting.

Enhancing teaching credentials and competency enables lecturers to transcend mere lecturing and attain a higher level of professionalism. Furthermore, it equips lecturers with the skills to effectively engage with and understand their students. Similarly, it facilitates the creation and delivery of educational institution inspection reports within designated timeframes, thereby meeting student satisfaction criteria while ensuring the lecturer's high level of competence. Conversely, competency empowers lecturers to thoroughly grasp the subject matter and proficiently deliver instruction.

Furthermore, higher education institutions are instrumental in helping students achieve superior results by offering comfortable learning facilities, a supportive environment, and highly qualified teaching staff to encourage academic excellence. Enhancing academic performance in higher education requires a joint effort from educators, administrators, and students. Educators should implement interactive teaching methods and offer personalized support, while administrators must prioritize upgrading facilities, enhancing academic services, and promoting professional development. Meanwhile, students need to develop strong study habits, seek academic assistance, and make full use of available resources. Through collaboration, these stakeholders can create a supportive learning environment that promotes academic excellence and equips students for future success. The outcomes of this study also assist students from higher education institutions in adequately preparing and taking appropriate actions to attain the highest levels of academic success.

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References

Adeniran, A. O. (2019). Application of Likert scale's type and Cronbach's alpha analysis in an airport perception study. *Scholar journal of applied sciences and research*, *2*(4), 1-5.

Al Kurdi, B., Alshurideh, M., Nuseir, M., Aburayya, A., & Salloum, S. A. (2021, March). The effects of subjective norm on the intention to use social media networks: An exploratory study using PLS-SEM and machine learning approach. In *International conference on advanced machine learning technologies and applications* (pp. 581-592). Cham: Springer International Publishing.

Arora, N., & Singh, N. (2017). Factors Affecting the Academic Performance of College Students. *Journal of Educational Technology*, *14*(1), 47-53.

Cavilla, D. (2017). The effects of student reflection on academic performance and motivation. *Sage Open*, *7*(3), 2158244017733790.

Cobo-Rendón, R., Pérez-Villalobos, M. V., Páez-Rovira, D., & Gracia-Leiva, M. (2020). A longitudinal study: Affective wellbeing, psychological wellbeing, self-efficacy and academic performance among first-year undergraduate students. *Scandinavian journal of psychology*, *61*(4), 518-526.

Ewetan, T. O., & Ewetan, O. O. (2015). Teachers' teaching experience and academic performance in mathematics and English language in public secondary schools in Ogun State, Nigeria. *International Journal of Humanities, Social Sciences and Education*, *2*(2), 123-134.

Fajar, S., Hussain, M., Sarwar, H., Afzal, M., & Gilani, S. A. (2019). Factors affecting academic performance of undergrad.

Gherheș, V., Stoian, C. E., Fărcașiu, M. A., & Stanici, M. (2021). E-learning vs. face-to-face learning: Analyzing students' preferences and behaviors. *Sustainability*, *13*(8), 4381.

Gilavand, A. (2016). Investigating the impact of environmental factors on learning and academic achievement of elementary students. *Health Sciences*, *5*(7S), 360-9.

Hayat, A. A., Shateri, K., Amini, M., & Shokrpour, N. (2020). Relationships between academic self-efficacy, learning-related emotions, and metacognitive learning strategies with academic performance in medical students: a structural equation model. *BMC medical education*, *20*, 1-11.

Imeokparia, P. O. (2018). Influence of environmental factors on academic performance of business students in upper basic level in Edo State. *Journal of education and practice*, *9*(24), 22-28.

Kalagbor, L. D. (2016). An Analysis of Factors Influencing Students' Academic Performance in Public and Private Secondary Schools in Rivers State-Nigeria. *Journal of Education and Practice*, *7*(28), 96-101.

Kaur, N., Dwivedi, D., Arora, J., & Gandhi, A. (2020). Study of the effectiveness of e-learning to conventional teaching in medical undergraduates amid COVID-19 pandemic. *National Journal of Physiology, Pharmacy and Pharmacology*, *10*(7), 563-567.

Khambali, M., Rokhman, F., Yulianto, A., & Sudana, I. M. (2022). Influence of academic qualifications, lecturer competencies and curriculum on student learning achievement through teaching factory. *Multicultural Education*, *8*(8), 19-24.

Khan, M. (2023). Academic self-efficacy, coping, and academic performance in college. *International Journal of undergraduate research and creative activities*, *5*(1), 3.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, *30*(3), 607-610.

Kuliya, M., & Usman, S. (2021). Perceptions of E-learning among undergraduates and academic staff of higher educational institutions in north-eastern Nigeria. *Education and Information Technologies*, *26*(2), 1787-1811.

Leo, S., Alsharari, N. M., Abbas, J., & Alshurideh, M. T. (2021). From offline to online learning: A qualitative study of challenges and opportunities as a response to the COVID-19 pandemic in the UAE higher education context. *The effect of coronavirus disease (COVID-19) on business intelligence*, 203-217.

Lucky, E. O. I., & Yusoff, N. B. M. (2015). Evidence on teaching qualifications, characteristics, competence and lecturer performance in higher institutions in Nigeria. *International Journal of Management in Education*, *9*(2), 129-150.

Mehmood, T., Alzoubi, H. M., & Ahmed, G. (2019). Schumpeterian entrepreneurship theory: Evolution and relevance. *Academy of Entrepreneurship Journal*, *25*(4).

Mohsen, A. S. (2017). The impact of self-esteem, academic self-efficacy and perceived stress on academic performance: A cross-sectional study of Saudi psychology students. *European Journal of Educational Sciences*, *4*(3), 51-63.

Moidunny, K. (2009). The effectiveness of the national professional qualification for educational leaders (NPQEL). *Unpublished Doctoral Dissertation, Bangi: The National University of Malaysia*, 1-789.

Molnár, G., & Kocsis, Á. (2024). Cognitive and non-cognitive predictors of academic success in higher education: a large-scale longitudinal study. *Studies in Higher Education*, *49*(9), 1610-1624.

Nuseir, M. T., Al Kurdi, B. H., Alshurideh, M. T., & Alzoubi, H. M. (2021, May). Gender discrimination at workplace: Do artificial intelligence (AI) and machine learning (ML) have opinions about it. In *The international conference on artificial intelligence and computer vision* (pp. 301-316). Cham: Springer International Publishing.

Okoye, H. C., Okoye, L. U., Okoh, J. I., Ezeji, F. N., Omankhanlen, A. E., & Onor, K. C. (2021). Environmental factors affecting students' academic performance in public senior secondary schools in Anambra State, Nigeria. *ATBU Journal of Science, Technology and Education*, *9*(1), 270–285.

Olufemi, O. T., Adediran, A. A., & Oyediran, W. O. (2018). Factors affecting students' academic performance in colleges of education in Southwest, Nigeria. *British Journal of Education*, *6*(10), 43-56.

Rafiola, R., Setyosari, P., Radjah, C., & Ramli, M. (2020). The effect of learning motivation, self-efficacy, and

blended learning on students' achievement in the industrial revolution 4.0. *International Journal of Emerging Technologies in Learning (iJET)*, *15*(8), 71-82.

Raza, S. A., Umer, A., Qazi, W., & Makhdoom, M. (2018). The effects of attitudinal, normative, and control beliefs on m-learning adoption among the students of higher education in Pakistan. *Journal of Educational Computing Research*, *56*(4), 563-588.

Realinho, V., Machado, J., Baptista, L., & Martins, M. V. (2022). Predicting student dropout and academic success. *Data*, *7*(11), 146.

Tratnik, A., Urh, M., & Jereb, E. (2019). Student satisfaction with an online and a face-to-face Business English course in a higher education context. *Innovations in education and teaching international*, *56*(1), 36-45.

Umar, U. N., & Samuel, R. I. (2019). Influence of school facilities and school types on senior secondary school science students' academic performance in Nasarawa State, Nigeria. *Case Studies Journal*, *8*(1), 84-88.

Yakubu, M. N., & Dasuki, S. I. (2020). Adoption of e-learning technologies among higher education students in Nigeria. *Education and Information Technologies*, *2*(1), 12-18.

Yokoyama, S. (2019). Academic self-efficacy and academic performance in online learning: A mini review. *Frontiers in psychology*, *9*, 2794.