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CLUSTERING ANALYSIS ON FACTORS RESPONSIBLE FOR STUDENTS' ACADEMIC LOW PERFORMANCE IN PLATEAU STATE POLYTECHNIC BARKING LADI, PLATEAU STATE

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ABSTRACT

Low academic performance among students in tertiary institutions has become a significant concern, particularly in developing countries like Nigeria. This challenge has manifested in high failure rates, poor examination outcomes, and declining graduation statistics. Despite various efforts by institutions and governments to curb this trend, there remains a lack of comprehensive, data-driven analysis to pinpoint the underlying causes. This gap has limited the effectiveness of interventions, necessitating a more systematic approach. This study investigates the factors contributing to low academic performance among students at Plateau State Polytechnic Barkin Ladi, using a clustering analysis approach. The research identifies individual, institutional, and environmental factors influencing academic outcomes. Data were collected from 300 students through structured questionnaires and analyzed using hierarchical cluster analysis and principal component analysis. The findings reveal that motivation, study habits, quality of teaching, curriculum relevance, access to resources, parental involvement, peer influence, and socioeconomic status are critical factors. The study concludes that a holistic approach is necessary to address low academic performance, recommending targeted interventions to enhance student motivation, improve teaching quality, increase access to resources, strengthen parental and community involvement, and address socioeconomic barriers. This research provides insights for stakeholders in the educational sector to develop effective strategies for improving academic performance.

Keywords: Cluster, Factors, Performance, Academic, Low

INTRODUCTION

Academic performance is a crucial indicator of the quality of education and the effectiveness of the learning process. It reflects the extent to which students have acquired knowledge, developed skills, and achieved the desired learning outcomes. However, low academic performance has been a persistent challenge faced by educational institutions worldwide, including Plateau State Polytechnic, Barkin Ladi. Several factors can contribute to low academic performance among students, ranging from individual characteristics and personal circumstances to institutional and environmental factors. Understanding these factors is essential for developing effective strategies to enhance student academic success and improve the overall quality of education.

Individual factors such as motivation, study habits, time management skills, and learning styles can significantly impact a student's academic performance (Areepattamannil, 2011). Additionally, socioeconomic status, family background, and parental involvement play a crucial role in shaping a student's educational experiences and outcomes (Sirin, 2005).

Institutional factors, including the quality of teaching, curriculum design, availability of resources, and the overall learning environment, can also influence student performance (Hanushek & Rivkin, 2010). Furthermore, environmental factors such as peer influence, community support, and cultural norms may contribute to shaping students' attitudes toward education and their academic aspirations (Thapa et al., 2013).

Addressing low academic performance requires a comprehensive understanding of the interplay between these various factors and their relative contributions. By identifying and analyzing the key factors contributing to low academic performance, educational institutions can develop targeted interventions and implement strategies to support students in overcoming academic challenges.

Plateau State Polytechnic, Barkin Ladi, has witnessed a concerning trend of low academic performance among its student population in recent years. This issue has manifested in various forms, including high failure rates, poor examination scores, and low graduation rates. The consequences are far-reaching, affecting not only the individual students but also the reputation and credibility of the institution. In response, the institution has implemented several initiatives such as academic mentorship programs, tutorial support sessions, regular review of curricula, and capacity-building workshops for lecturers aimed at improving teaching delivery and student engagement. Despite these efforts, the problem persists, suggesting that the root causes may be more complex and multifaceted than previously addressed.

Previous research has explored the determinants of students' academic performance from various angles. Sirin (2005) highlighted the impact of socioeconomic status on academic achievement, while Credé and Kuncel (2008) identified study habits and time management as strong predictors of academic success. Rivkin, Hanushek, and Kain (2005) emphasized the role of teacher quality, and Jeynes (2007) found that parental involvement significantly affects student outcomes. However, these studies often focus on individual or isolated factors and do not adequately capture the combined influence of multiple dimensions such as institutional and environmental contexts. Moreover, in the Nigerian setting, particularly in polytechnic institutions, few studies have applied advanced statistical techniques like cluster analysis to uncover hidden patterns among the contributing variables. This study seeks to fill that gap by providing a data-driven analysis of the clusters of factors responsible for low academic performance among students at Plateau State Polytechnic, Barkin Ladi.

This study holds significance for various stakeholders within the educational system and the broader community. By identifying and analyzing the factors contributing to low academic performance, the study will provide valuable

insights to various stakeholders in the government and educational sector.

Motivation and self-regulation have been widely recognized as critical determinants of academic success (Deci & Ryan, 2000; Zimmerman, 2008). Students with high levels of intrinsic motivation and the ability to self-regulate their learning processes tend to exhibit better academic performance (Mega et al., 2014; Pintrich & De Groot, 1990). Conversely, low motivation and poor self-regulation skills can contribute to low academic performance (Wolters, 2003).

Effective study habits and time management skills are essential for academic achievement (Credé & Kuncel, 2008; Nonis & Hudson, 2010). Students who employ effective study strategies, such as note-taking, active reading, and regular practice, tend to perform better academically (Hartwig & Dunlosky, 2012; Kornell & Bjork, 2007). Additionally, the ability to manage time effectively and prioritize academic tasks can significantly impact academic performance (Britton & Tesser, 1991; Macan et al., 1990).

Individual differences in learning styles and cognitive abilities can influence academic performance (Dunn & Griggs, 2000; Pashler et al., 2008). Students with learning preferences aligned with the instructional methods employed tend to perform better (Lovelace, 2005; Litzinger et al., 2007). Moreover, cognitive abilities, such as intelligence, problem-solving skills, and critical thinking, have been linked to academic achievement (Deary et al., 2007; Kuncel et al., 2004).

Numerous empirical studies have investigated the relationship between individual factors and academic performance. For instance, a study by Mega et al. (2014) found a positive correlation between intrinsic motivation and academic achievement among college students. Additionally, Credé and Kuncel's (2008) meta-analysis revealed that study habits and skills, such as time management and self-discipline, were significant predictors of academic performance.

The quality of teaching and instructional practices has a profound impact on student academic performance (Hattie, 2009; Rivkin et al., 2005). Effective teaching strategies, such as clear communication, proper pacing, and active learning techniques, can enhance student engagement and comprehension (Chickering & Gamson, 1987; Freeman et al., 2014). Additionally, the use of technology and multimedia resources in the classroom can facilitate learning and improve academic outcomes (Schmid et al., 2014; Tamim et al., 2011).

The design and relevance of the curriculum play a crucial role in shaping academic performance (Eisner, 2002; Ornstein & Hunkins, 2018). A well-structured curriculum that aligns with students' needs, interests, and future goals can foster engagement and motivation, ultimately enhancing academic achievement (Brophy, 2013; Renzulli, 2016). Conversely, a curriculum that lacks relevance or fails to address the diverse learning needs of students can contribute to low academic performance (Darling-Hammond, 1997).

Access to adequate resources and support services is essential for promoting academic success (Blanco, 2008; Pascarella & Terenzini, 2005). Libraries, laboratories, and technological infrastructure play a vital role in facilitating learning and research (Asiyai, 2014; Okojie, 2010). Additionally, support services such as academic advising, tutoring, and counselling can help students overcome challenges and develop the necessary skills for academic achievement (Bettinger & Baker, 2014; Crisp & Nora, 2010).

Institutional factors have also been extensively explored in the literature. A study by Rivkin et al. (2005) highlighted the significant impact of teacher quality on student achievement, with effective teachers contributing substantially to academic success. Furthermore, a study by Freeman et al. (2014) demonstrated that active learning instructional strategies, such as collaborative learning and problem-based learning, led to improved academic performance and reduced failure rates compared to traditional lecturing methods. In terms of curriculum design, a study by Renzulli (2016) found that enriched and relevant curricula that cater to students' interests and abilities fostered higher levels of engagement and achievement.

Socioeconomic status (SES) and family background have been consistently linked to academic performance (Bradley & Corwyn, 2002; Sirin, 2005). Students from low-SES backgrounds often face challenges such as limited access to educational resources, poor nutrition, and unstable home environments, which can adversely affect their academic performance (Aikens & Barbarin, 2008; Lacour & Tissington, 2011). Furthermore, parental involvement and support have been shown to positively influence academic achievement (Jeynes, 2007; Wilder, 2014).

Peer influence and social support can significantly impact academic performance (Altermatt & Pomerantz, 2003; Ryan, 2000). Positive peer relationships and supportive social networks can foster motivation, perseverance, and a sense of belonging, ultimately contributing to better academic outcomes (Wentzel & Caldwell, 1997; Wentzel et al., 2010). Conversely, negative peer influence and lack of social support can lead to disengagement, poor study habits, and low academic achievement (Chen, 2005; Steinberg et al., 1992).

Cultural and community factors can shape attitudes, beliefs, and values regarding education, which can influence academic performance (Ogbu, 1992; Stedman, 1987). Cultural norms and expectations, as well as the community's level of support and involvement in educational initiatives, can either promote or hinder academic success (Bourdieu, 1986; Lee & Bowen, 2006). Additionally, factors such as language barriers, discrimination, and access to educational resources within the community can impact academic performance (Castro et al., 2011; Ogbu & Simons, 1998).

Environmental factors have also garnered significant attention in the literature on academic performance. A longitudinal study by Sirin (2005) revealed a strong positive correlation between socioeconomic status (SES) and academic achievement, with students from higher SES backgrounds performing better academically. Additionally, Jeynes (2007) conducted a meta-analysis that demonstrated the positive influence of parental involvement on academic achievement across various ethnic and socioeconomic groups.

Peer influence and social support have also been studied extensively. Chen's (2005) study found that positive peer relationships and a supportive social network were associated with higher levels of academic engagement and achievement. Conversely, a study by Steinberg et al. (1992) indicated that negative peer influence, such as involvement with deviant peer groups, could lead to poor academic performance and disengagement from school.

While numerous studies have examined individual factors or specific combinations of factors influencing academic performance, relatively few have focused on clustering and profiling these factors. However, some notable studies have employed clustering techniques to identify distinct groups or patterns among the factors contributing to academic performance.

For instance, a study by Senkbeil and Damer (2021) utilized cluster analysis to identify distinct profiles of students based on their motivational beliefs, self-regulation strategies, and academic achievement. Their findings revealed four distinct

clusters, each with unique characteristics and patterns of academic performance.

Similarly, a study by Korobova and Starobin (2015) employed clustering techniques to identify groups of students based on their academic performance, socioeconomic status, and other individual and environmental factors. The study revealed distinct clusters of students with varying levels of academic achievement and highlighted the interplay between multiple factors in shaping academic outcomes.

These studies demonstrate the potential of clustering analysis in providing a more nuanced understanding of the complex interrelationships among the factors contributing to academic performance, which can inform targeted interventions and support strategies.

While the existing literature has extensively explored various individual, institutional, and environmental factors influencing academic performance, there is a need for a comprehensive analysis that integrates these factors within the specific context of Plateau State Polytechnic, Barkin Ladi. Furthermore, the utilization of clustering techniques to identify distinct profiles or patterns among these factors has been relatively underexplored, particularly in the Nigerian higher education context. This study aims to address this research gap by conducting a clustering analysis of the factors contributing to low academic performance among students at Plateau State Polytechnic, Barkin Ladi. By identifying distinct clusters or groups of factors, the study seeks to provide a more nuanced understanding of the interrelationships and relative importance of these factors in shaping academic outcomes.

MATERIALS AND METHODs

Research Design

This study adopts a survey approach of quantitative research method. The quantitative component involves the collection and analysis of numerical data through a structured questionnaire. This aspect of the study utilizes a descriptive research design, which aims to describe the characteristics and relationships among the variables under investigation. This design is appropriate for identifying and analyzing the factors contributing to low academic performance and examining their potential interrelationships.

Population and Sampling

The target population for this study comprises all students currently enrolled at Plateau State Polytechnic, Barkin Ladi. To obtain a representative sample, a multistage sampling technique was employed. In the first stage, stratified random sampling was used based on the institutional structure, which consists of six schools. From each school, two departments were selected through simple random sampling, resulting in a total of twelve departments. The schools and selected departments are as follows:

School of Administration – Department of Public Administration and Department of Social Development

School of Information Technology – Department of Library Science and Department of Computer Science

School of Science and Technology – Department of Statistics and Department of Hospitality Management

School of Engineering – Department of Civil Engineering and Department of Electrical Engineering

School of Environmental Technology – Department of Building and Department of Quantity Surveying

School of Business – Department of Accountancy and Department of Banking and Finance

In the second stage, a simple random sampling technique was applied within each of the twelve selected departments to identify individual participants. This ensured that all students within the selected departments had an equal chance of being included in the study. A total sample size of 300 students was drawn for the research to enhance the reliability, validity, and generalizability of the findings across the institution.

Data Collection Methods

Data collection was conducted using the primary method: a structured questionnaire. The questionnaire was developed based on the review of relevant literature and the research objectives. The questionnaire consists of three sections, including demographic information, individual factors, institutional factors, and environmental factors. Each section contains a series of 5 statements or questions to which participants responded using the Likert-type scale (strongly agree, agree, neutral, disagree, strongly disagree).

Data Analysis

The data collected through the questionnaire and interviews were analyzed using the linkage method of hierarchical clustering analysis and the principal component analysis. The cluster analysis was employed to identify distinct groups or clusters of students based on their responses to the questionnaire items. This analysis helped uncover patterns and profiles of factors contributing to low academic performance, enabling the development of targeted interventions and support strategies.

Steps to Cluster Analysis

The method to be used for this work is the hierarchical cluster analysis (average linkage method). The two 'closest' (most similar) clusters are then combined and this is done repeatedly until all subjects are in one cluster. In the end, the optimum number of clusters is then chosen out of all cluster solutions. The dendrogram displays the merging of clusters at different levels of dissimilarity.

The Principal Component analysis

Principal component analysis (PCA) was conducted on the responses obtained from the questionnaire. Tests including KMO, Bartlett's, communalities, scree plot, and rotated component matrix were used to assess the appropriateness, dimensions, and loadings. Extracted components revealed the underlying key factors that lead to the low academic performance of students of the Plateau State Polytechnic.

PCA is a multivariate statistical technique that aims to reduce dimensionality while preserving data structure. It identifies linear combinations of the original variables, known as principal components, which capture the maximum variance within the data. PCA yields components that maximize variance calculated iteratively.

The Variables

The variables of the study are defined as follows

Section A: Individual Factors

X_1= I am highly motivated to achieve academic success.

X_2= I have effective study habits and a consistent routine.

X_3= I manage my time efficiently for academic tasks.

X_4= My learning style aligns well with the teaching methods used.

X_5= I possess strong critical thinking and problem-solving abilities.

Section B: Institutional Factors

X_6= The quality of teaching and instructional practices at my institution is high.

X_7= The curriculum is relevant and aligned with my interests and future goals.
X_8= I have adequate access to resources (libraries, laboratories, technology).
X_9= The academic support services (advising, tutoring, counselling) are effective.
X_{10}= The overall learning environment at my institution is conducive to academic success.
Section C: Environmental Factors
X_{11}= My family's socioeconomic status provides sufficient educational resources.
X_{12}= I receive strong parental/family support for my education.
X_{13}= My peer group has a positive influence on my academic aspirations.
X_{14}= The community is supportive of educational initiatives.
X_{15}= I do not face significant cultural or language barriers in my studies.

RESULTS AND DISCUSSION
Clustering Analysis: Average Linkage (Between Groups)

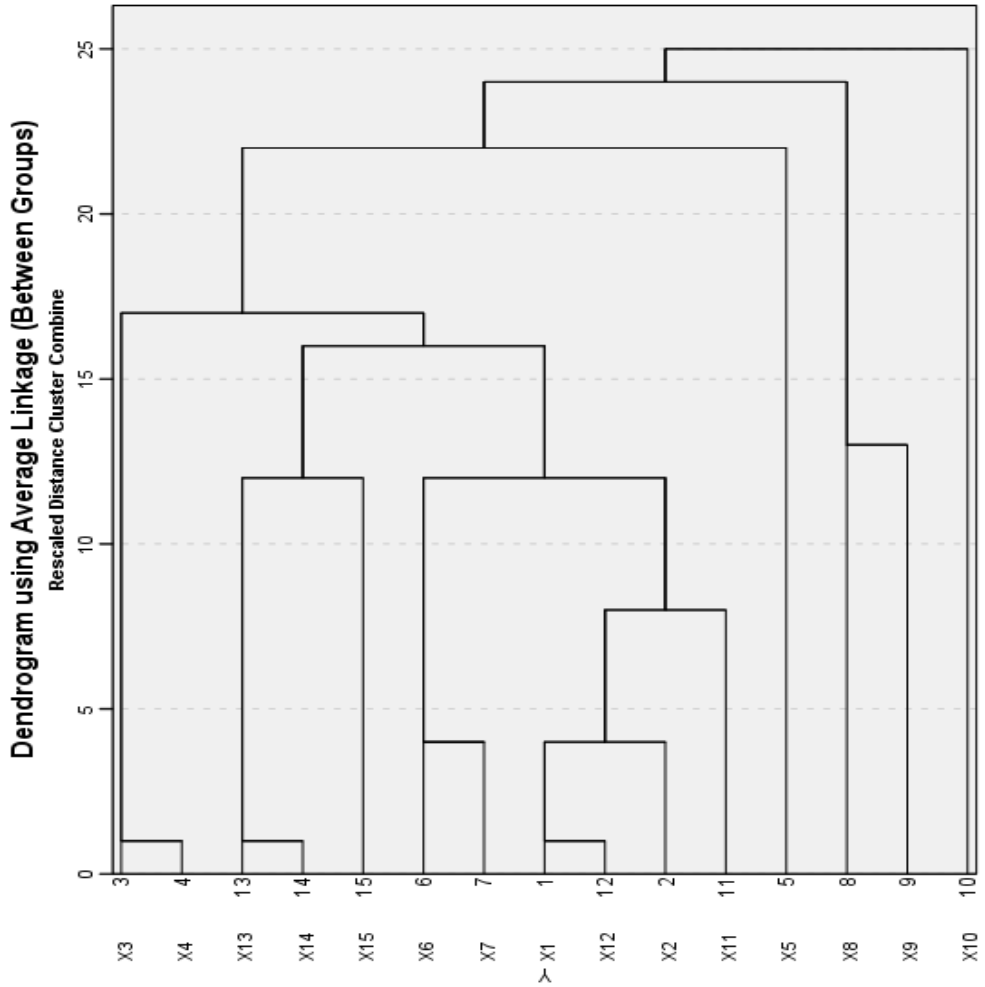

Figure 1: Dendrogram for Average Linkage

The dendrogram in Figure 1 shows the average linkage clustering, which often provides a balance between the single and complete linkage methods. In this representation, it was observed that the variables tend to form three main clusters that roughly correspond to the three categories of factors in the study. This clustering suggests that while there are interrelationships among all factors, the variables within each category (individual, institutional, and environmental) tend to have stronger associations with each other in their impact on academic performance.
From the result shown on the dendrogram in Figure 4.1, a close relationship between certain pairs of variables, such as X_1 (motivation) and X_2 (study habits), X_{11} (socioeconomic status) and X_{12} (parental support) can be observed.

Factor Analysis
Table 1 shows the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy which is a statistic that indicates the proportion of variance in the variables that might be caused by underlying factors. In this case, the KMO value is 0.737, which is moderately adequate for factor analysis. This suggests that the sample size and the correlations between the variables are sufficient to proceed with the factor analysis. Bartlett's Test of Sphericity is a statistical test that examines the null hypothesis that the correlation matrix is an identity matrix, which would indicate that the variables are unrelated and therefore unsuitable for structure detection. The highly significant p-value ($p<0.001$) indicates that the null hypothesis can be rejected, meaning the data is likely factorable.

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**0.737**
Bartlett's Test of Sphericity	Approx. Chi-Square	802.242
	DF.	105
	Sig.	0.000

Table 2 shows the proportion of each variable's variance that can be explained by the extracted factors. Variables with higher communalities (>0.5) indicate that a large portion of their variance is accounted for by the factors, suggesting that these variables are well represented in the common factor space. For example, "I have effective study habits and a consistent routine" (0.549) and "I manage my time efficiently for academic tasks" (0.661) have high communalities, implying that these variables are important in explaining the underlying factors. Conversely, variables with lower communalities (<0.4) suggest that a significant portion of their variance is not explained by the extracted factors. This could mean that these variables are not strongly related to the factors or that there are additional factors that should be considered to better explain the variance in these variables. Examples of variables with low communalities include "I possess strong critical thinking and problem-solving abilities" (0.223) and "The overall learning environment at my institution is conducive to academic success" (0.276).

Table 2: Communalities

Variables	**Initial**	**Extraction**
I am highly motivated to achieve academic success.	1.000	0.349
I have effective study habits and a consistent routine.	1.000	0.549
I manage my time efficiently for academic tasks.	1.000	0.661
My learning style aligns well with the teaching methods used.	1.000	0.348
I possess strong critical thinking and problem-solving abilities.	1.000	0.223
The quality of teaching and instructional practices at my institution is high.	1.000	0.467
The curriculum is relevant and aligned with my interests and future goals.	1.000	0.437
I have adequate access to resources (libraries, laboratories, technology).	1.000	0.370
The academic support services (advising, tutoring, counselling) are effective.	1.000	0.479
The overall learning environment at my institution is conducive to academic success.	1.000	0.276
My family's socioeconomic status provides sufficient educational resources.	1.000	0.373
I receive strong parental/family support for my education.	1.000	0.379
My peer group has a positive influence on my academic aspirations.	1.000	0.624
The community is supportive of educational initiatives.	1.000	0.511
I do not face significant cultural or language barriers in my studies.	1.000	0.382

Table 3 shows the percentage of the total variance in the data that is accounted for by the extracted factors. In this case, three factors were extracted, which together explain 42.841% of the total variance.

Table 3: Total variance explained

Component	**Initial Eigenvalues/Extraction Sums of Squared Loadings**		
	Total	**% of Variance**	**Cumulative %**
1	3.535	23.567	23.567
2	1.591	10.606	34.173
3	1.300	8.669	42.841

The first factor explains 23.567% of the variance, the second factor explains 10.606% of the variance, and the third factor explains 8.669% of the variance. This indicates that the three extracted factors capture a substantial portion of the total variance in the data, but there is still a considerable amount of unexplained variance (57.159%).

Table 4: Component Matrix

Variables	**Components**		
	1	**2**	**3**
I am highly motivated to achieve academic success.	0.488	0.311	-0.119
I have effective study habits and a consistent routine.	0.534	0.440	0.264
I manage my time efficiently for academic tasks.	0.251	0.772	-0.037
My learning style aligns well with the teaching methods used.	0.406	0.402	-0.145
I possess strong critical thinking and problem-solving abilities.	0.327	0.035	0.340
The quality of teaching and instructional practices at my institution is high.	0.498	-0.414	0.218
The curriculum is relevant and aligned with my interests and future goals.	0.534	-0.379	-0.092
I have adequate access to resources (libraries, laboratories, technology).	0.367	-0.145	0.464
The academic support services (advising, tutoring, counselling) are effective.	0.495	0.060	0.479
The overall learning environment at my institution is conducive to academic success.	0.400	-0.206	0.270
My family's socioeconomic status provides sufficient educational resources.	0.578	-0.198	0.002

I receive strong parental/family support for my education.	0.584	0.181	-0.068
My peer group has a positive influence on my academic aspirations.	0.613	-0.025	-0.497
The community is supportive of educational initiatives.	0.516	-0.225	-0.440
I do not face significant cultural or language barriers in my studies.	0.536	-0.190	-0.243

Table 4 presents the factor loadings, which are the correlations between the variables and the extracted factors. These loadings indicate the strength and direction of the relationship between each variable and the factors.

Variables with high loadings (>0.5) on a factor are considered strongly associated with that factor. For example, "My peer group has a positive influence on my academic aspirations" (0.613) and "I receive strong parental/family support for my education" (0.584) have high loadings on Factor 1, suggesting they are important individual academic factors.

Variables with high negative loadings (<-0.4) on a factor are also considered strongly associated with that factor but in the opposite direction. For instance, "The quality of teaching and instructional practices at my institution is high" (-0.414) and "The curriculum is relevant and aligned with my interests and future goals" (-0.379) have high negative loadings on Factor 2, indicating they are important institutional factors that negatively impact academic performance.

The results of this factor analysis provide valuable insights into the key factors influencing students' academic performance at the Plateau State Polytechnic. The analysis identified three main factors which are in line with the clustering analysis.

i. Individual Academic Factors: These factors relate to the student's own academic abilities, habits, and motivation, such as study habits, time management, and academic aspirations. Interventions targeting these factors, such as study skills workshops, time management training, and academic counselling, could be effective in improving student performance.
ii. Institutional Factors: The analysis has highlighted several institutional factors that impact academic performance, *such as the quality of teaching*, *the relevance of the curriculum*, and *access to resources*. Addressing these institutional factors through faculty development programs, curriculum reviews, and resource allocation could enhance the overall learning environment and support student success.
iii. Environmental Factors: The analysis has also identified environmental (sociocultural factors), such as family support, peer influence, and community engagement, as important contributors to academic performance. Implementing programs that foster parental involvement, peer mentoring, and community-school partnerships could positively impact students' academic outcomes.

Findings and Discussion

The study identified key factors contributing to low academic performance among students at Plateau State Polytechnic Barkin Ladi. The results highlighted three main clusters of factors: individual, institutional, and environmental. Individual factors included motivation, study habits, time management, learning styles, and cognitive abilities. The analysis showed a strong correlation (0.81) between motivation and study habits, indicating that motivated students are more likely to develop effective study routines. Institutional factors such as the quality of teaching, curriculum relevance, access to resources, and support services were identified as significant (having values $p < 0.05$). High-quality teaching and a relevant curriculum were crucial for better academic outcomes, and the availability of academic support services like tutoring and counselling played a vital role. Environmental factors, including socioeconomic status, parental involvement, peer influence, and community support, were also critical. Students from higher socioeconomic backgrounds with strong parental support and positive peer influence showed better academic performance.

The study concludes that low academic performance among students at Plateau State Polytechnic Barkin Ladi is a multifaceted issue that involves a complex interplay of individual, institutional, and environmental factors. The clustering analysis provided a nuanced understanding of how these factors interact and influence student performance, highlighting the need for targeted interventions. On the individual level, factors such as motivation, study habits, and time management are crucial, as students who are motivated and have good study habits tend to perform better academically. Institutional factors, including the quality of teaching, curriculum relevance, and the availability of resources and support services, also play a significant role. High-quality teaching and a relevant curriculum can engage students and enhance their learning experience, while access to resources and support services like tutoring and counselling can provide the necessary academic assistance. Environmental factors, such as socioeconomic status, parental involvement, peer influence, and community support, further compound the issue. Students from higher socioeconomic backgrounds with strong parental support and positive peer influence tend to have better academic outcomes. Thus, addressing low academic performance requires a holistic approach that considers all these factors. Stakeholders in the educational sector need to work collaboratively to develop and implement strategies that address the individual needs of students, improve the quality of teaching and curriculum, increase access to academic resources and support services, and foster a supportive environment both at home and in the community.

CONCLUSION

This study provides a data-driven examination of the multifaceted factors contributing to low academic performance among students at Plateau State Polytechnic, Barkin Ladi. Through the application of hierarchical clustering analysis and principal component analysis, the research identified three primary clusters of influencing factors; individual, institutional, and environmental. The findings reveal that academic performance is not determined by isolated variables but by the interplay of motivation, study habits, quality of instruction, curriculum relevance, access to academic resources, family background, and peer and community influence. The clustering approach enabled a clearer understanding of how these variables relate and combine to affect students' academic outcomes. These underline the importance of holistic and targeted interventions that address student-centred needs, institutional improvement, and supportive socio-environmental structures. Ultimately, this study deepens our understanding of the root causes of academic failure and also offers a practical framework for academic support and interventions in tertiary institutions.

RECOMMENDATIONS

Enhance motivation and study habits by implementing programs and workshops that boost student motivation and teach effective study habits and time management skills. Improve teaching quality and curriculum relevance by investing in teacher training and curriculum development to ensure that the teaching methods and content are engaging and aligned with students' needs and future goals. Increase access to resources and support services by expanding access to libraries, laboratories, and technology, and enhancing academic support services such as tutoring and counseling. Strengthen parental and community involvement by fostering stronger partnerships with parents and the community to create a supportive environment for students. Address socioeconomic barriers by providing financial assistance and resources to students from low socioeconomic backgrounds to ensure they have the necessary support for their education.

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