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Exploring student performance variations at Kisii University: An investigation of teaching methods, faculty comparisons, and academic progress

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Abstract
The current investigation embarked on a study of the discrepancies in student accomplishment at Kisii University. The primary objectives of this research included evaluating the effectiveness of teaching methods, identifying factors contributing to performance disparities, comparing achievements among different faculties, and depicting individual students' academic progress. Employing a descriptive survey research design, the study encompassed the entire student body at Kisii University. A purposive sampling technique was utilized to select 92 respondents. The research aimed to determine the various teaching methods employed at Kisii University, identify the causes of performance variations, compare achievements across faculties, and present a comprehensive account of academic progress. Data collection involved questionnaires and subsequent analysis using SPSS software. Descriptive and inferential statistics, including chi-square tests, were employed to explore associations between variables. The findings revealed that the School of Pure and Applied Sciences (SPAS) demonstrated superior performance compared to other faculties. Inadequate personal study emerged as the primary factor influencing performance variations. Additionally, students exhibited a preference for physical classes over online alternatives, and the overall performance rating of the university was average. Based on the conclusions, it is recommended that the institution consider all four variables and focus on enhancing student performance through effective facilitation to mitigate performance variations.

Keywords: Student performance, disparities, teaching methods, performance variations, achievements, faculties, academic progress, descriptive survey research design, questionnaires, SPSS software

Introduction
Numerous investigations have been conducted on elements that impact scholarly performance in universities. One exploration focused on the influence of students' socioeconomic background on academic achievement in universities, examining students at Kisii University (Okioga CK, 2013) [1]. The exploration revealed that socioeconomic background significantly affects academic performance. Another study assessed the efficacy of learner-centred approaches in the integrated English curriculum in secondary schools in Bungoma County, Kenya (Matere A 2022) [2]. The study discovered that students had a positive perspective towards English, and their achievement was moderate. An additional examination explored the effect of teaching staff development on students' academic performance in Kisumu County, Kenya (Elizabeth OA, Yambo JMO, Getange NK, 2022) [3]. The study demonstrated that teaching staff development significantly impacted students' academic performance. Factors that influence the performance of Kenyan secondary school students in English grammar were evaluated in a research study (Ombati JM, *et al.*) [4]. The investigation found that factors such as parental engagement, teacher competence, and student motivation significantly influenced academic achievement. These findings highlight the importance of various elements in determining academic performance. The studies underscore the significance of socioeconomic background, instructional methods, and other influential factors in shaping students' achievement. As we unravel the complexities associated with academic success, it becomes increasingly evident that a comprehensive understanding of these factors is vital to foster an environment conducive to optimal learning outcomes.

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The main objectives of this study aimed to evaluate the effectiveness of teaching methods, identify the multifarious factors contributing to performance disparities, compare achievements across diverse faculties, and depict the academic progress of individual students at Kisii University. These objectives were anchored in the necessity of comprehending the pedagogical approaches employed by the university, uncovering the underlying causes of performance disparities, gauging achievements across faculties, and understanding individual students' scholastic advancement. To accomplish these objectives, a descriptive survey research design was adopted. The target population consisted of all students enrolled at Kisii University, encompassing various academic disciplines and faculties. Purposeful sampling techniques facilitated the selection of a representative sample of 92 participants, ensuring adequate representation across faculties and academic levels. Data gathering involved administering questionnaires designed to capture essential information regarding teaching methods, factors influencing performance disparities, faculty comparisons, and individual students' academic progress. After data collection, statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) software. A blend of descriptive and inferential statistical techniques, including chi-square tests, aimed to uncover associations and relationships among the variables under scrutiny. The findings provided valuable insights into student performance at Kisii University. Specifically, the School of Pure and Applied Sciences (SPAS) emerged as a stronghold of excellence, outshining other faculties. Inadequate personal study emerged as the most significant factor influencing performance disparities. Moreover, students displayed a marked preference for physical classes, relegating online alternatives to a secondary role. On a broader scale, the overall performance rating of the university was average. Based on the findings, it is advised that Kisii University and other stakeholders consider the identified variables, including teaching methods, factors influencing performance disparities, faculty comparisons, and academic progress. Additionally, the institution should prioritize bolstering student performance through effective facilitation, thereby reducing performance disparities across faculties. This research represents a significant contribution to the existing body of knowledge on student performance within tertiary education institutions. By shedding light on the factors underpinning performance disparities and providing valuable insights into effective teaching methodologies, the study equips educational practitioners, administrators, and policymakers with vital information to enhance the overall quality of education and elevate student outcomes.

Methodology
Research Design
The research design employed in this study embraced a descriptive survey approach, enabling a comprehensive investigation of performance disparities among students at Kisii University. This design facilitated the collection of data that meticulously described and examined various facets of student performance, teaching methods, faculty comparisons, and academic progress within the institution. Participants: The target population for this study included all students enrolled at Kisii University. To ensure representation across diverse faculties and academic levels, purposeful sampling techniques were utilized. A sample size of 92 participants was selected based on these sampling methods.

Data Collection
The process of data collection revolved around administering well-crafted questionnaires. These questionnaires were adeptly designed to capture pertinent information relating to teaching methods, factors influencing performance disparities, faculty comparisons, and individual students' academic progress. The questionnaires were distributed among the selected participants, who were encouraged to respond candidly and accurately.

Data Analysis
The collected data underwent comprehensive analysis using the esteemed Statistical Package for the Social Sciences (SPSS) software. Descriptive statistics were harnessed to summarize and illuminate the salient characteristics of student performance, teaching methods, and academic progress. Inferential statistics were employed to uncover associations and relationships between variables. Using chi-square tests, the analysis delved into potential significant associations within the variables under investigation.

Ethical Considerations
Throughout the research endeavour, ethical guidelines were strictly adhered to, ensuring the protection of participants' rights and privacy. Prior to participating in the study, informed consent was diligently obtained from all participants. Confidentiality and anonymity were safeguarded by assigning unique identifiers to each participant and securely storing the data.

Limitations
The findings of this study should be interpreted within the context of several limitations. Firstly, the sample size of 92 participants may limit the generalizability of the findings to the entire student population at Kisii University. Additionally, the study relied on self-reported data, which may be susceptible to response bias. Furthermore, the cross-sectional nature of the research design limits the establishment of causal relationships between variables.

Conclusion
The utilization of a descriptive survey research design, purposeful sampling techniques, and data analysis using the esteemed SPSS software facilitated a comprehensive examination of student performance at Kisii University. The collated data gleaned from meticulously designed questionnaires provided valuable insights into teaching methods, factors influencing performance disparities, faculty comparisons, and academic progress. These findings enrich the existing body of knowledge on student performance within tertiary education institutions and offer recommendations to enhance educational practices and elevate student outcomes.

Results
This section presents the findings of the research study, discussing the outcomes of each objective. The objectives were examined through both descriptive and inferential analyses.

Most Preferred Teaching Methods at Kisii University
Description of the Most Preferred Method of Teaching

Table 1: Mode of learning used frequently

	Frequency	Percent	Valid Percent	Cumulative Percent
online	8	8.7	8.7	8.7
Valid physical	84	91.3	91.3	100.0
Total	92	100.0	100.0	

The responses from students at Kisii University regarding their preferred method of learning are summarized in Table 5.1. The majority of students (91.3%) indicated a preference for physical classes, while only 8.7% preferred online classes. This data suggests that physical learning is the most favoured teaching method at Kisii University.

From the frequency table above, it is evident that the choice of teaching method has an impact on student performance.

The analysis shows that physical learning is the most preferred method at Kisii University.

Inferential Analysis
Inferential analysis was conducted to examine the association between gender and the preferred mode of learning. A chi-square test was performed to determine the relationship.
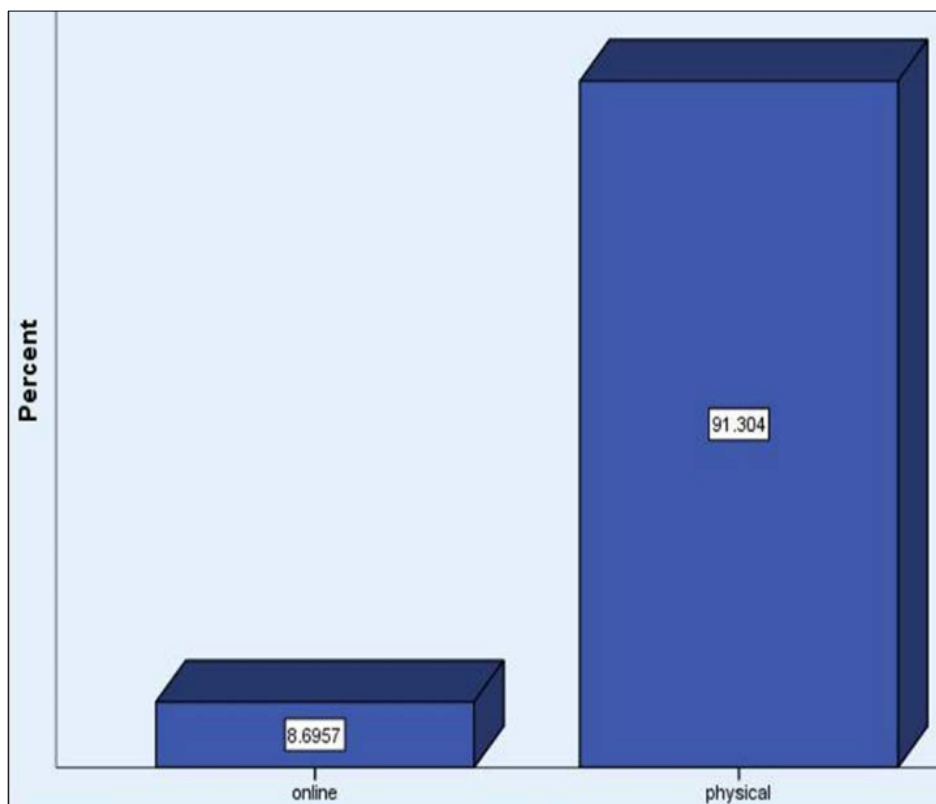

Fig 1: Mode of learning do you frequently use?

Chi-Square Tests

Table 2: Chi-square test for mode of learning frequently used

	Value	DF	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact (1-sided)	Sig.
Pearson Chi-Square Continuity	.349ª	1	.555			
Correction ᵇ	.045	1	.831			
Likelihood Ratio	.343	1	.558			
Fisher's Exact Test				.710	.408	
N of Valid Cases	92					

The results of the chi-square test are presented in Table 5.2. With a p-value of 0.555, there is no significant relationship between gender and the preferred mode of learning. 5.2 Cause of Variation in Performance at Kisii University.

Description of the main cause of student under-performance

Table 3: Main cause of student underperformance.

	Frequency	Percent	Valid Percent	Cumulative Percent
Early closing of the library	18	19.6	19.6	19.6
few lecturers	13	14.1	14.1	33.7
Lack of personal	30	32.6	32.6	66.3
Valid study	12	13.0	13.0	79.3
Peer pressure students' ignorance	19	20.7	20.7	100.0
Total	92	100.0	100.0	

Table 5.3 provides a summary of the responses regarding the main causes of student underperformance. The main factors identified include the early closing of the library, few

lecturers, and lack of personal study, peer pressure, and students' ignorance. These factors contribute to variations in student performance.
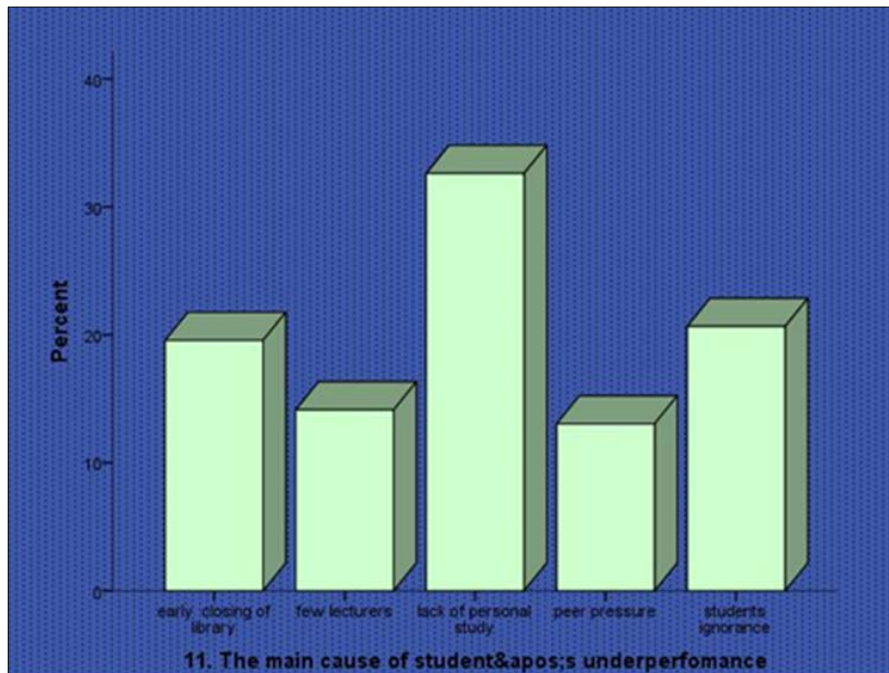
Fig 3: Responses on student underperformance.

Figure 5.3 visually represents the responses regarding student underperformance.

5.2.1 Inferential Analysis
An inferential analysis was conducted to determine the association between the causes of student underperformance and their performance. A chi-square test was employed for this purpose.

Chi-Square Tests

Performance of students in different faculties at Kisii University
Description of performance in different faculties at Kisii University

Table 4: Chi-square test.

	Value	DF	Asymp. Sig. (2-sided)
Pearson Square Chi-	6.906ᵃ	8	.547
Likelihood Ratio	7.363	8	.498
N of Valid Cases	92		

The results of the chi-square test are presented in Table 5.4. With a p-value of 0.547, there is no significant relationship between the causes of student underperformance.
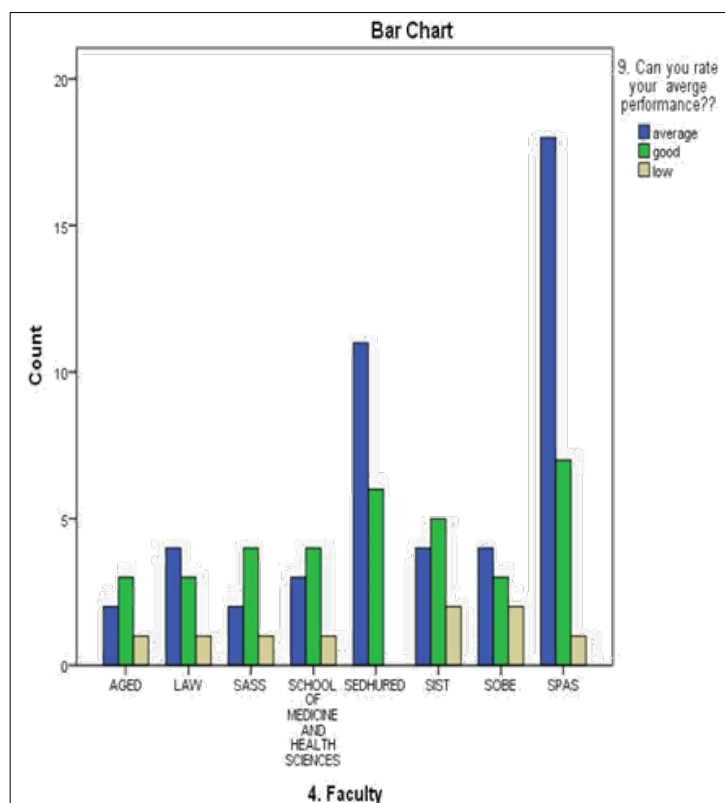

Fig 5: Performance per faculty

According to the graph, the Faculty of Pure and Applied Sciences (SPAS) outperforms other faculties in terms of student performance.

Inferential Analysis
An inferential analysis was conducted to determine if there were significant differences in performance among the faculties. A chi-square test was performed.

Table 5: Chi-square test

	Value	DF	Asymp. Sig. (2-sided)
Pearson Chi-	11.746ᵃ	14	.627
Square Likelihood Ratio	13.164	14	.514
N of Valid Cases	92		

The results of the chi-square test are presented in Table 5.5. With a p-value of 0.627, there is no significant difference in performance among the faculties

General Performance of Kisii University
Description of Average Performance
Average performance

Table 6: General performance

	Frequency	Percent	Valid Percent	Cumulative Percent
Average	48	52.2	52.2	52.2
Good	35	38.0	38.0	90.2
Valid low	9	9.8	9.8	100.0
Total	92	100.0	100.0	

Table 5.6 displays the responses regarding the average performance of students at Kisii University. The majority of students (52.2%) rated their performance as "Average", while 38.0% considered their performance as "Good", and 9.8% rated it as "Low".
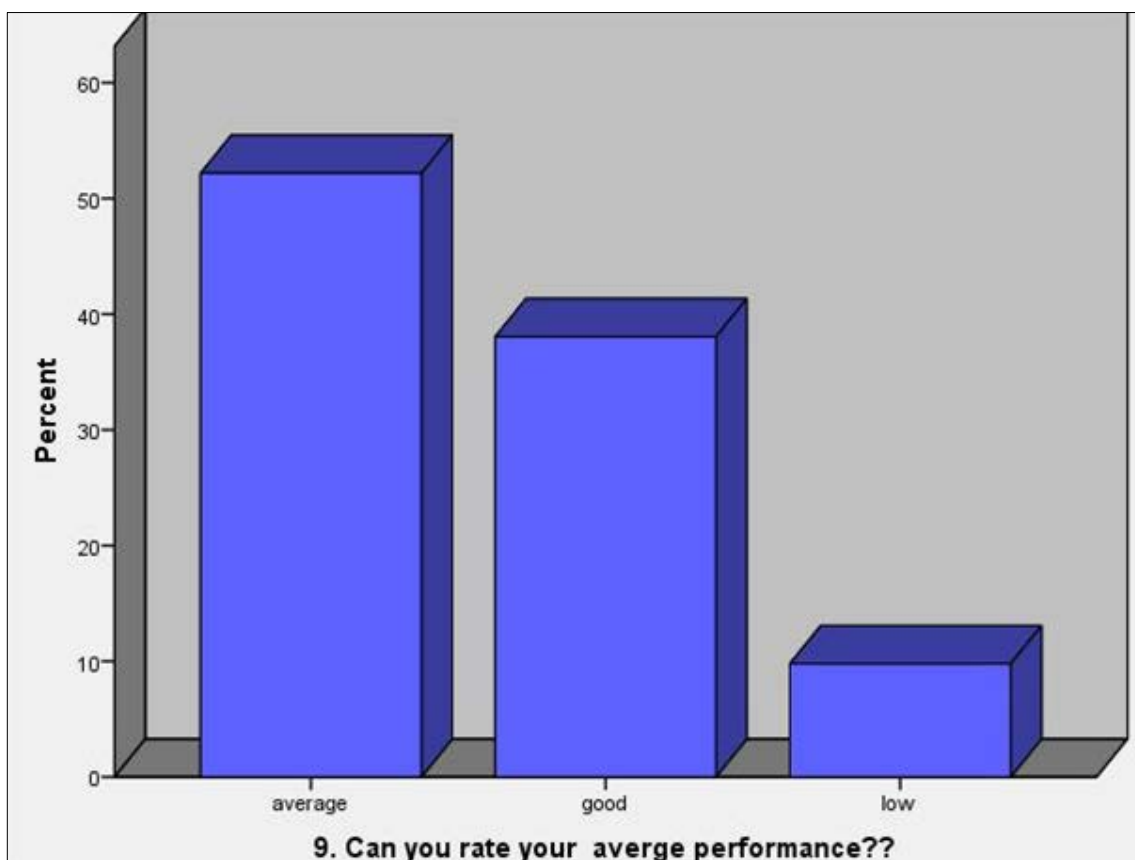

Fig 6: Visually represents the responses on general student performance.

In general, the performance of students at Kisii University is considered average based on the findings, with a small percentage of students achieving lower performance.

Inferential Analysis
An inferential analysis was conducted to examine the relationship between students' performance and their year of study at Kisii University. A chi-square test was used.

Chi-Square Tests

Table 7: Chi-Square test.

	Value	DF	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.238ᵃ	6	.161
likelihood Ratio	9.608	6	.142
N of Valid Cases	92		

The results of the chi-square test are presented in Table 5.7. With a p-value of 0.161, there is no significant relationship between students' performance and their year of study. Therefore, the null hypothesis that there is no significant difference in performance based on the year of study is accepted.

Conclusion
This chapter delves into a profound exploration of the diversification in student accomplishment at Kisii University, shedding light on pivotal factors that impact learners' triumphs. The findings of this inquiry hold invaluable insights for instructors, policymakers, and learners, providing a comprehensive comprehension of the intricate and interconnected components that contribute to scholarly prosperity. Furthermore, the chapter establishes an essential

cornerstone for forthcoming research endeavours in this realm.

Preferred Method of Instruction

The investigation discloses that the overwhelmingly favoured method of instruction among learners is face-to-face learning. Students perceive this approach as exceedingly efficacious, primarily owing to the elevated level of interaction it affords with their esteemed lecturers. Conversely, online learning is met with less enthusiasm, largely due to the requisite adaptations and limited access to resources.

The principal catalyst for variation in students' performance

While acknowledging that the study may not have captured the entirety of performance variation causes, it accentuates two notable factors: The absence of individual study and students' lack of awareness. These factors are intricately entwined and hinge upon learners' study strategies. Premature library closure and the scarcity of instructors also contribute to performance fluctuation. Furthermore, the influence of peer pressure cannot be disregarded, as some students succumb to the sway of their peers and stray from their primary educational objective.

Performance comparison across different disciplines at Kisii University

Significant performance disparity manifests among the various faculties at Kisii University. The study reveals a substantial fluctuation of 19.52% between the highest and lowest-performing schools. This discrepancy serves as a disheartening reality, underscoring the pressing need for improvement across the institution to enhance academic prowess.

Evaluating the average performance of Kisii University

The study substantiates that a majority of students at Kisii University surpass the average threshold, boasting an average performance rate of 52.2% and a commendable performance rate of 38%. This bodes well for both the students and the institution, as it signifies a superior performance in contrast to the 9.8% of students falling below expectations.

Recommendations

1. Embrace face-to-face learning extensively within the university, as students regard it as the most effective mode of knowledge transfer.
2. Enhance the effectiveness and competitiveness of online learning by endowing students with ample online resources, such as study devices and data bundles. Encourage learners to procure these resources before enrolling, fostering a collaborative cost-sharing approach between students and the institution while fostering the widespread adoption of online learning.
3. Galvanize students to devise and adopt personalized study strategies, enabling them to undertake additional research pertaining to their respective courses. This approach mitigates the first two causes of performance variation, which heavily rely on students' proactive involvement.
4. Tailor library operations to accommodate students' preferred study schedules, even contemplating round-the-clock access. Augment the library staff to facilitate its seamless functioning, thereby fostering an environment conducive to improvement and the cultivation of high-calibre graduates.
5. Augment the faculty by recruiting additional instructors to alleviate overcrowded lecture halls. This paves the way for enhanced interaction between students and educators, ultimately bolstering the institution's overall performance

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