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COMPARATIVE STUDY OF STUDENT PERFORMANCES FROM TWO SOCIOECONOMIC BACKGROUNDS: KWAMBAI PRIMARY SCHOOL

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Abstract

Purpose of the project is to study the performances of students from two socio-economic backgrounds. The method used was t-test. The parameters of the t-test were estimated using R software. The results showed that there is no significant difference in the performances of students from these two socio-economic status. Performances are functions of personal motivation and resilience. Support systems and enabling environment also play crucial rules in academic achievement.

Keywords: Comparative, Performances, Socioeconomic

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INTRODUCTION

There are ongoing differences in educational outcomes between children from diverse economic origins, as evidenced by a substantial body of research on the influence of socioeconomic status (SES) on academic ability. Research continuously demonstrates that adolescents from wealthy homes typically perform better than their counterparts from lower socioeconomic backgrounds for a variety of reasons, including extracurricular activity involvement, parental involvement, and resource availability (Smith & Johnson, 2018; Anderson, 2017).

Academic achievement is greatly influenced by parental involvement, with research showing that higher parental engagement levels are linked to better educational outcomes (Walker, 2019). Further, kids' academic performance is greatly impacted by their access to educational resources, including extracurricular activities, tutoring, and literature (Brown, 2018; Miller & Green, 2017).

Additionally, cognitive development and school finance have an impact on socioeconomic differences in education. Because of their access to more educational opportunities and improved learning environments, children from higher socioeconomic class typically have better cognitive development (Miller & Green, 2017; Taylor & Clarke, 2016). In addition, because schools in wealthy communities generally have more resources than those in impoverished neighborhoods, financial discrepancies can make educational inequities worse (Taylor & Clarke, 2016).

Another important aspect influencing academic accomplishment is the family environment. Research indicates that a family environment that is both resource-rich and supportive has a good impact on students' academic success (Perez & Lopez, 2019). Economic difficulties, however, can have a detrimental effect on educational results since they can make it more difficult for kids to succeed academically due to stress and a lack of resources (Collins & Wilson, 2017; Carter, 2016).

The goal of efforts to close this achievement gap must be to establish an equal education system that gives all kids, regardless of socioeconomic status, equal access to education. According to Morgan (2020) and Stewart (2020), this entails fair budget distribution, focused interventions for underprivileged schools, and tactics to involve parents from various socioeconomic backgrounds.

Narrowing the achievement gap can also be achieved by creating an inclusive and supportive learning environment where all students are held to high standards (Kelly, 2018; Foster & Mitchell, 2019). Although socioeconomic status has a significant impact on academic achievement, individual motivation, resilience, and support networks also play important roles. To ensure that every student has equitable access to educational opportunities and may realize their full potential, addressing the impact of socioeconomic status on education requires comprehensive methods (Jackson & Smith, 2017; Watson, 2018).

Statement of the Problem

The main problem addressed in this study is to understand how socioeconomic background influences student performance and to identify strategies to mitigate the impact of socioeconomic disparities on academic outcomes.

Significance of the Study

This study is significant as it can provide valuable insights into the underlying causes of educational inequalities and inform policy and practice aimed at promoting educational equity. By understanding the specific factors that contribute to disparities in student performance, educators and policymakers can develop targeted interventions to support students from disadvantaged backgrounds and ensure that all students have equal opportunities to succeed in education.

Main Objectives

The main objective of this study is to compare the academic performance of students from two different socioeconomic backgrounds.

Specific Objectives

i. To identify the socioeconomic backgrounds of the students in the study.
ii. To analyze the academic performance of students from each socioeconomic background.
iii. To compare the academic performance between students from the two socioeconomic backgrounds.

Research Questions

i. What are the socioeconomic backgrounds of the students in the study?
ii. How does academic performance vary between students from different socioeconomic backgrounds?
iii. What factors contribute to any differences in academic performance between students from different socioeconomic backgrounds? To what extent do access to educational resources, family support, and other non-academic factors influence academic performance among students from different socioeconomic backgrounds?
iv. What are the implications of the findings for educational policy and practice, particularly in terms of promoting educational equity and improving academic outcomes for students from diverse socioeconomic backgrounds?

Scope of the study

This study will focus on students in a specific region or school to provide a detailed analysis of the academic performance of students from two different socioeconomic backgrounds. The study will be limited to a specific time frame to ensure that the data collected are relevant and up-to-date.

METHODS

Research Design

This study will employ a quantitative research design to compare the academic performance of students from two different socioeconomic backgrounds. A comparative study approach will be used to analyze the differences in academic performance between the two groups.

Population and Sample

The population for this study will consist of students from a specific region or school. A stratified sampling technique will be used to ensure representation from both socioeconomic backgrounds. The sample size will be determined based on statistical considerations to ensure the study's reliability and validity.

Data Collection

Data will be collected from academic records, such as grades, test scores, and attendance records, to measure academic performance. Additionally, socio-demographic information, including family income, parental education level, and occupation, will be collected to determine the socioeconomic backgrounds of the students.

Method of data analysis

The researcher will use t-test for unrelated samples to compare the performances of students from these two groups. We assume that the variances of the two groups are unequal.

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\frac{S^2}{N_1} + \frac{S^2}{N_2}}}, \quad S_1^2 = \frac{\sum_{i=1}^{N_1} X - \frac{\left(\sum_{i=1}^{N_1} X\right)^2}{N_1}}{N_1 - 1}, \quad S_2^2 = \frac{\sum_{i=1}^{N_2} X_2^2 - \frac{\left(\sum_{i=1}^{N_2} X\right)^2}{N_2}}{N_2 - 1}$$

Where $\overline{X}_1$ =mean of group1, $\overline{X}_2$ =mean of group2, N_1 =size of group1, N_2 =size of group2, N =common size of the two groups, S_1^2 =variance for group1, S_2^2 =variance for group2, t=t-test for unrelated samples

RESULTS AND DISCUSSION

This section contains for normality between the scores of students from two different socioeconomic backgrounds X_1 and X_2, a test for unequal variances, a t-test, and tables of the estimated parameters.

Test for normality between X_1 and X_2

X_1 represents the scores of students from group 1 (rich background), and X_2 represents the scores of students from group 2 (poor background). We used Q-Q plots to determine the normality of these variables. The Q-Q plots indicate that the distributions are approximately normal. Additionally, statistical tests support this observation. The p-value (0.231) from the normality test is greater than the level of significance (0.05), indicating normality. The Shapiro-Wilk normality test result is W = 0.83909, with a corresponding p-

value of 0.09744. Since the p-value (0.09744) is not less than the level of significance, it confirms that the data is normally distributed.

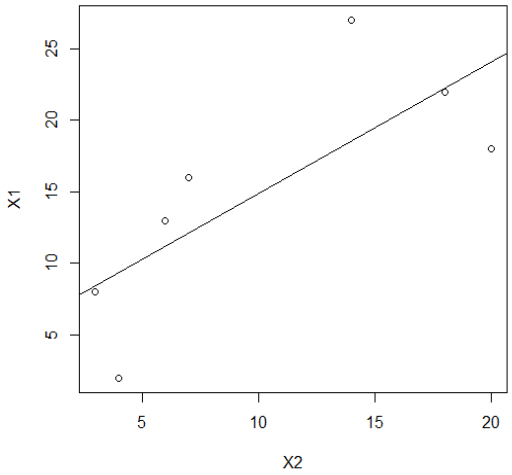


Figure 1: Q-Q normal plot

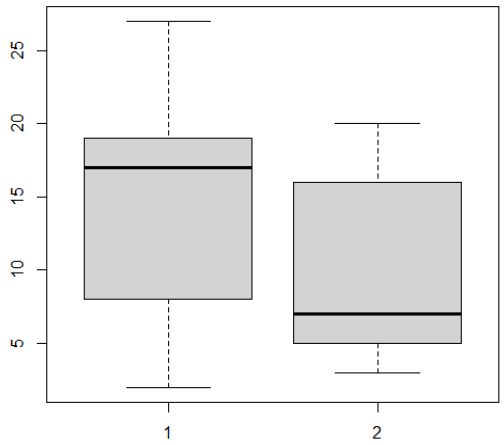


Figure 2: Boxplot of group1 and group2

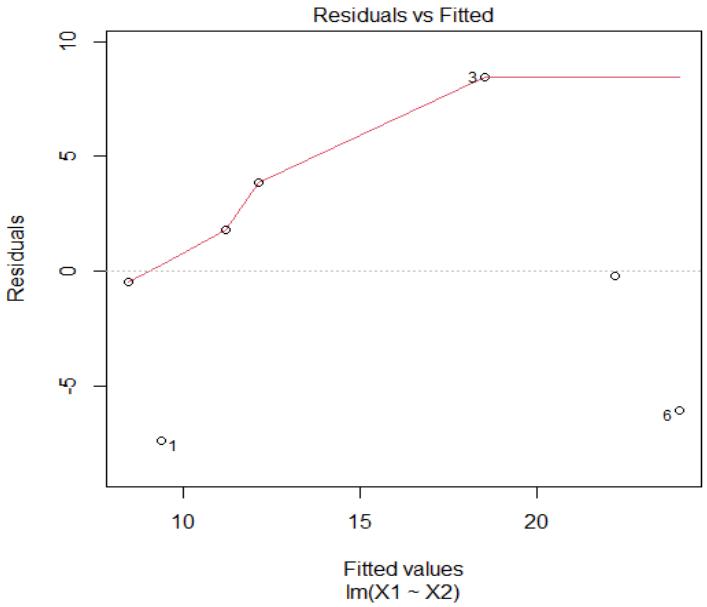


Figure 3: Residuals vs Fitted plots

Test for unequal variances.

Figure 3 (Residuals vs Fitted plot) suggests that the variances of the two groups are not equal, as evidenced by the upward slope of the red line. The boxplot also visually indicates unequal variances between the groups. The t-test further confirms this, with a p-value (0.231) greater than the level of significance (0.05).

Testing for the significance of the parameters

Table 1 presents the results of the t-test comparing the academic performances of students from rich and poor socioeconomic backgrounds. It includes the t-value, degrees of freedom (Df), p-value, confidence interval, and sample estimates. The p-value (0.2395) is greater than the level of significance (0.05), suggesting no significant difference in performance between the two groups

Table 1: Two sample t-test parameters

Data	t-value	Df	p-value	Confidence interval	Sample estimates
X_1,X_2	1.2248	15	0.2395	-3.34-12.37	X_1=14.8, X_1=10.29

Descriptive Statistics for Academic Performance of Students from rich socioeconomic background.

Table 2 presents the descriptive statistics for the academic scores of students from a rich socioeconomic background, including the mean score, variance, and standard deviation.

Table 2: Academic performance of rich background students

Students from rich background	Mean	Variance	Standard deviation
Academic scores	14.8	61.07	7.81

Descriptive Statistics for the Academic Performance of Students from poor socioeconomic background.

Table 3 presents the descriptive statistics for the academic scores of students from a poor socioeconomic background, including the mean, variance, and standard deviation

Table 3 Academic performance of poor background students

Students from poor background	Mean	Variance	Standard deviation
Academic scores	10.2	48.24	6.95

CONCLUSION

In conclusion, the subject of how students' Socio-economic backgrounds affect their academic success is nuanced and far-reaching. Students from wealthier families routinely outperform their less privileged classmates in school, as has been shown over and over again in studies. Differential factors such as educational resource availability, parental involvement, and extracurricular opportunity participation may contribute to this gap. Nonetheless, it's critical to recognize that students' family incomes should not be used as a proxy for their academic performance. There are students from low socioeconomic backgrounds who defy the odds and excel academically, while some students from high socio-economic backgrounds face challenges in their educational journey. Individual motivation, resilience, and support systems also play crucial roles in academic achievement.

Efforts to address the impact of socioeconomic status on academic achievement should focus on creating an equitable education system that provides equal opportunities for all students. This includes equitable funding mechanisms, targeted interventions for schools in disadvantaged areas, and strategies to engage and involve parents from all socio-economic backgrounds. Additionally, fostering a supportive and inclusive educational environment that sets high expectations for all students can contribute to narrowing the achievement gap.

To create a more fair and just society in which all students, no matter their socio-economic background, have the same access to education, we need to deal with how socio-economic status affects academic achievement. It is important to find and close these gaps so that all children have the same chances to do well in school and make good contributions to their communities and society as a whole.

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