

Impact of Socioeconomic Status on Academic Achievement of Medical Students at Alzaiem Alazhari University 2021-2022

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Abstract: Socioeconomic status (SES), an index of one's overall social status or prestige in society, is one of the most widely studied constructs in the social sciences. Student's academic performance or gain is affected by several factors including socioeconomic status, school environment, family background, age, gender, parents' academic levels, residential area of students, medium of instruction in schools, tuition trend, daily study hour, peer influence, drug and alcohol use, sexual activities and others. To study Impact of socioeconomic status on academic achievement among Alzaiem Alazhari medical students, 2021. This was a cross-sectional Descriptive Study conducted at Faculty of medicine at Alzaiem Alazhari University in Khartoum Bahri during the period from December 2021 to March 2022. We targeted medical students registered at Alzaiem Alazhari University. A questionnaire in a Google form was sent to them. This study included 208 participants. 57.2% of the participants were females, and 80.8% of them were in the age group between 21 and 23 years old. 43.7% of them had a family of high Socio-economic status. Regarding the GPA of the last semester a score between 3 and 3.4 was the most score achieved, this was the situation also regarding the continuous GPA. 90.3% of them said their parents supported them during education. In contrast, only 39.4% agreed that their parents' level of education affected their educational attitude, age, father's level of education, and participants who agreed that their parents' level of education affects their educational attitude differed with a statistical significance with GPA. Factors found to be affecting GPA significantly were age, father's level of education, and participants who agreed that their parents' level of education affects their educational attitude. This study provided the community with data regarding socioeconomic status and academic achievement which can make a good base for others researches and a good quality of academic life. The primary goal of education is to provide students with the knowledge, cognitive abilities, and career skills they will need to participate in society. Therefore, it is crucial to understand the elements influencing pupils' academic success.

Keywords: Cumulative Grade Point Average, Socio-Economic Status, Academic Performance

1. Introduction

1.1. Background

Socioeconomic status (SES), an index of one's overall social status or prestige in society, is one of the most widely studied constructs in the social sciences. It is usually measured alongside education, occupational status, and income [1]. Student's academic performance or gain is affected by several

factors including socioeconomic status, school environment, family background, age, gender, parents' academic levels, residential area of students, medium of instruction in schools, tuition trend, daily study hours, peer influence, drug and alcohol use, sexual activities and others. A student's educational success is contingent heavily on the social status of the student's parents/guardians in society [2]. The same parent's income or social status positively affects the student's academic performance [3]. Parents' SES has a direct influence

on their children's eventual occupational attainment and has been found to be the most powerful and consistent predictor of achievement and career aspirations [4]. Many current findings support previous research which showed that it is more difficult for parents from lower SES backgrounds to positively influence their children's education [4].

Individuals from backgrounds entailing socio-economic disadvantage (SED) are under-represented in the physician workforce [5, 6]. However, such individuals are more likely to care for underserved populations in both rural and urban settings, and their presence in medical school classes increases the diversity of thought and experience [7, 8]. These observations have increased attention on the need to increase matriculation and retention of individuals from socio-economically disadvantaged backgrounds in medical schools [5].

1.2. Problem Statement

It is implied that students of low socioeconomic families have fewer educational opportunities than those from middle and upper-class families. The educational background of the student's families plays an important role in academic success. The constant debate between socioeconomic status and academic performance is evident in many studies. Here in Sudan, a third-world country, where we have very poor socio-economic conditions need such research to be done as – to our knowledge- there is no similar published research.

1.3. Justification

The results of this study will help educators make important decisions on education reform that will best benefit all social groups of students. This study will determine if there is a correlation between socioeconomic status and educational performance at Alzaiem Alazhari University. With the determination of this data, administrators can push for reform with legislators and the ministry of higher education to implement strategies to make all medical students successful.

1.4. Research Objectives

1.4.1. General Objective

To study the Impact of socioeconomic status on academic achievement among Alzaiem Alazhari medical students 2021.

1.4.2. Specific Objectives

- 1) To determine the impact of socioeconomic class on the academic achievement of students.
- 2) To compare the difference in Academic Achievement of high Socio-economic Status level and middle Socio-economic Status level and low Socio-economic Status level in Alzaiem Alazhari University Medical Students.
- 3) To clarify the factors that influences the student's academic performance normally.
- 4) To determine the extent to which parents' level of education influences students' academic performance.

- 5) To determine the extent to which parental involvement in education influences students' academic performance.

1.5. Socioeconomic Status

Socioeconomic status is the blend of economic and sociological measures of an individual work experience and the economic and social position of an individual or family in connection to others on the premise of income, educational level and occupational status. For the investigation of a family socioeconomic status, the household income, education of earner and occupation are checked and in addition consolidated wage contrasted and a person, when their own attributes are assessed [9].

Socioeconomic status is by and large partitioned into three categories i.e., high socioeconomic status, middle socioeconomic status and low socioeconomic to clarify the three fields a family or an individual may fall into. At the point when putting a family or individual into one of these classifications, any or the majority of the three variables i.e., income, education, and occupation can be investigated and evaluated [10].

1.6. Academic Achievement

Academic achievement represents performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college, and university. School systems mostly define cognitive goals that either apply across multiple subject areas (e.g., critical thinking) or include the acquisition of knowledge and understanding in a specific intellectual domain (e.g., numeracy, literacy, science, history) [11]. Therefore, academic achievement should be considered to be a multifaceted construct that comprises different domains of learning. Because the field of academic achievement is very wide-ranging and covers a broad variety of educational outcomes, the definition of academic achievement depends on the indicators used to measure it [12]. Among the many criteria that indicate academic achievement, there are very general indicators such as procedural and declarative knowledge acquired in an educational system, more curricular-based criteria such as grades or performance on an educational achievement test, and cumulative indicators of academic achievement such as educational degrees and certificates [13]. All criteria have in common that they represent intellectual endeavors and thus, more or less, mirror the intellectual capacity of a person. In developed societies, academic achievement plays an important role in every person's life. Academic achievement as measured by the GPA (grade point average) or by standardized assessments designed for selection purpose such as the SAT (Scholastic Assessment Test) determines whether a student will have the opportunity to continue his or her education (e.g., to attend a university) [14]. Therefore, academic achievement defines whether one can take part in higher education, and based on the educational degrees one attains, influences one's vocational career after education. Besides the relevance for an

individual, academic achievement is of utmost importance for the wealth of a nation and its prosperity. The strong association between a society's level of academic achievement and positive socioeconomic development is one reason for conducting international studies on academic achievement, such as PISA (Programme for International Student Assessment), administered by the OECD (Organization for Economic Co-operation and Development) [15]. The results of these studies provide information about different indicators of a nation's academic achievement; such information is used to analyze the strengths and weaknesses of a nation's educational system and to guide educational policy decisions. Given the individual and societal importance of academic achievement, it is not surprising that academic achievement is the research focus of many scientists; for example, in psychology or educational disciplines [16].

Socio-economic status and students' academic performance:

Children from low SES households and communities develop academic skills more slowly compared to children from higher SES groups [17]. Initially academic skills are correlated with the home environment, where low literacy environment and chronic stress negatively affect a child's pre academic skills. The school systems in low SES communities are often under resourced, negatively affecting students' academic progress. Inadequate education and increased dropout rates affect children's academic performance [18]. It was noticed that identifying as a part of lower class in college has been associated with feeling of not belonging in school and intentions to drop out of school before graduation. In the same vein, perception of family economic stress and personal financial constraints affect emotional distress/depression in students and their academic outcomes [19].

Research has found that socioeconomic status, parental involvement and family size are particularly important family factors major books. Peer influences can also affect student's performance. Peer pressure and peer conformity can lead to an individual participating in risk-taking behaviors which have been found to have negative, indirect effect on academic performance/test score [20]. Children from low socio-economic status more long distances from home to school do not eat from school and hardly access scholastic materials like books, pens, uniform, and paraffin/lights for revision in the evening/preps and the like and this have a great impact on students' academic performance. To perpetuate the low socioeconomic status of the community, improving school system and early intervention programs my help to reduce these risk factors, and thus increased research on the correlation between socioeconomic status and education is essential [21].

1.7. Family Factors and Students' Academic Performance

Family background is the most important influence on student learning and includes factors such as socio-economic status, parents' educational levels, family size, maternal characteristics and others. The environment at home is a primary socialization agent and influences a child's interest in

school and aspirations for the future [22].

Smaller family size has been linked with higher academic achievement, students with fewer siblings are likely to receive more parental attention and have more access to resources than children from large families. The additional attention and support leads to better school performance [23].

Maternal characteristics are another key factor that affects academic achievement. Mothers who are more educated and have higher self-esteem have children who receive high test scores. Also, mothers who delay child bearing have been shown to provide more "cognitively stimulating" and supportive environment at home which has a positive effect on school performance [24]. It is believed that low SES negatively affects academic achievement because low SES prevents access to vital resources and creates additional stress at home. The economic hardships that are caused by low SES led to disruption in parenting, an increasing amount of family conflicts, and an increased likelihood of depression in parents and single-parent household. For these reasons SES is closely tied to home environment and one could argue that SES dictates the quality of home life for children [25].

1.8. Previous Studies

A previous study aimed to find out the impact of Socio-economic Status on academic achievement of students belonging to upper primary stage from class VII was taken from A.M.U School. The results revealed the fact that there is exists a high positive role between Socio-economic Status of students and academic achievement also the study showed that the academic achievement variables according to high variation in Socio-economic level of students those students who belong to high Socio-economic Status usually achieve higher marks and grades in their schooling while those who come from middle and lower Socio-economic Status background obtained average and lower marks in their schooling [26].

In another study which conducted to examine and explore the impact of Socio-economic Status on the academic achievement of senior secondary Schools students, the results shows that there is a positive Correlation exist between Socio-economic Status and academic achievement of senior secondary Schools students [27].

An article presented the impact of parents' socioeconomic status on undergraduate students' academic achievements at a Malaysian higher education institution. The eastern parts of Peninsular Malaysia are populated by low-income citizens compared to the national average. The survey was conducted in University Malaysia Terengganu. The targeted population is final year social science students. The total size of the target population is 965 students. Using Krejcie and Morgan's sampling method, a sample size of 333 students was surveyed. A descriptive research design was adopted in this study. Data were obtained from stratified random sampling comprising a total of 333 respondents in Universiti Malaysia Terengganu from 14 states across Malaysia. The data were collected through a semi-structured questionnaire. Data analysis was

carried out using tables and figures. The findings revealed that most of the students stated that a parent's socioeconomic status does not influence their academic achievement [28].

Another study from Canada's National Longitudinal Study of Children and Youth (NLSCY) examined how the academic achievement gap attributed to SES change from childhood to adolescence (ages 7 to 15). The results indicate widening gap in mathematics achievement between students of higher and lower families in Canada [29].

Other study conducted in Ganderbal district of jammu and Kashmir to investigate the relationship between socioeconomic status and academic achievement of secondary Schools students in 2012-13. The results show there's a significant difference between academic achievement of high socioeconomic status of students comparing with low socioeconomic status of students [30].

In another study main aim was to investigate the effect of socioeconomic status on student's academic achievement. Descriptive survey research design was employed. The targeted population was students from the College of Education and Behavioral Sciences Haramaya University, Eastern Ethiopia. 172 students were taken from the target population through stratified random sampling. The results showed them that first, family income did not bring anything new to students' academic Achievement; second, there was statistically significant negative relationship between sex and students' academic achievement, finally family education level contributed 40.96 academic achievement; finally, family education level contributed 40.96% ($R^2 * 100\%$) to students' academic achievement whereas 59.04% ($(1-R^2) * 100\%$) were unexplained variables that contributed to students' academic achievement [31].

In other study they investigate the impact of both socioeconomic status and school types on student academic achievement in Turkey through different national examination based on data from two million students. The results that students in private schools who were socioeconomically stronger had significantly higher academic achievement level [32].

In the study, they examine the possible role of self-concept in the relationship between SES and school academic achievement among 345 junior high school students in China. The results showed that both family SES and self-concept were significantly associated with the children's Chinese and mathematics performance, and family SES was also significantly correlated with self-concept. The mediation analysis showed that self-concept partially mediated the relationship between SES and school academic achievement. These findings suggest that interventions targeting self-concept may be an effective way in which to improve children's school academic achievement [33].

In a meta-analysis study Although it's widely believed that socioeconomic status is strongly correlated with measures of academic achievement in the study which use meta-analysis techniques show the socioeconomic status is only weakly Correlation with academic achievement. [34].

Other study the data article presents the impact of parents'

socioeconomic status on undergraduate students' academic achievements at a Malaysian higher education institution. The survey was conducted in Universiti Malaysia Terengganu. The results revealed that most of the students stated that a parent's socioeconomic status does not influence their academic achievement [35].

2. Methodology

2.1. Study Designs

This was a Observational facility base CROSS-SECTIONAL DESCRIPTIVE Study.

2.2. Study Area and Duration

This study was done in Faculty of medicine at ALzaiem Alazhari University in Khartoum Bahri in schools street in Aldanagla distinct. This study was conducted from DECEMBER 2021 to MARCH 2022.

2.3. Study Population

This study targeted medical students registered at Alzaiem Alazhari University.

2.4. Inclusion Criteria

4th and 5th academic class.

2.5. Exclusion Criteria

1st, 2nd, 3rd years.

2.6. Sample Size and Technique

Sample size was calculated using:

$$n = Z^2 pq / d^2$$

n=sample size. P= Population =400 (200 student in each batch in the 2 batches)

q=1-p

d= precision at 95% confidence interval= 0.05. Level of error =5%

Z= normal standard distribution= 1.96

As a result of calculation, the minimum sample size required for the study=197

Samples were taken using randomized sampling technique.

2.7. Research Tools and Data Collection Methods

Data was collected through questionnaire in Google form application.

2.8. Study Variables

2.8.1. Dependent

Academic achievement.

2.8.2. Independent

- 1) Income
- 2) Occupation

3) Education

2.9. Data Analysis

Data was analyzed using the statistical package SPSS V26 for windows. Categorical variables were analyzed using proportions and frequencies whereas continuous variables were analyzed using mean and SD.

2.10. Ethical Clearance

The ethical approval to conduct the study and the final ethical clearness was obtained from the Community department of Faculty of medicine, Alzaiem Alzhari University, Students data confidentiality was ensured.

3. Results

3.1. Study Participants

This study included 208 participants from Al-Zaiem Al-Azhari faculty of medicine. 57.2% of the participants were females, and 80.8% of them were in the age group between 21 and 23 years old. 43.7% of them had a family income of more than 100,000 SDG per month (High socioeconomic status), moreover, majority of them (66.3%) live with families. Details are shown in table 1.

Table 1. Participants' demographic characteristics (n=208).

Variable	Frequency	Percent	
Gender	Male	89	42.8%
	Female	119	57.2%
Age	16 – 20 years	3	1.4%
	21 – 23 years	168	80.8%
	Above 23 years	37	17.8%
	Batch	24	107
Living condition	25	101	48.6%
	Family	138	66.3%
Family monthly income	Student housing	53	25.5%
	With relatives	17	8.2%
	10000-20000 SDG (Low)	16	7.7%
Family monthly income	21000-50000 SDG (Low)	44	21.2%
	51000-100000 SDG (Moderate)	57	27.4%
	Over 100000 SDG (High)	91	43.8%

3.2. Students' Academic Performance

Most of the participants (63.5%) achieved more than 90% in the Sudanese Secondary School Certificate. Regarding the GPA of the last semester a score between 3 and 3.4 was the most score achieved, this was the situation also regarding the continuous GPA. When asked what the worst score you have achieved was in the previous exam, most of the participants answered C. In contrast, 70.2% have never scored F before. Moreover, 97.1% have never been denied from entering an exam. Details are shown in table 2.

Table 2. Students' academic performance.

Variable	Frequency	Percent	
Sudanese secondary school certificate score	Less than 80%	1	0.5%
	80% - 85%	6	2.9%
	85% - 90%	69	33.2%
	More than 90%	132	63.5%
GPA Last semester	Below 2	1	0.5%
	2 – 2.4	7	3.4%
	2.5 – 2.9	53	25.5%
	3 – 3.4	95	45.7%
	3.5 – 4	52	25%
CGPA	Below 2	1	0.5%
	2 – 2.4	12	5.8%
	2.5 – 2.9	68	32.7%
	3 – 3.4	86	41.3%
The worst degree in the previous exams	3.5 – 4	41	19.7%
	F	36	17.3%
	C	97	57.4%
	B	35	16.8%
Scoring F	A	1	0.5%
	No	172	82.7%
Denied from entering an exam	Yes	36	17.3%
	No	202	97.1%
	Yes	6	2.9%

3.3. Parental Involvement in the Educational Process

Upon assessing the parental involvement in the participants' education 90.3% of their parents supported them during education. In contrast, only 39.4% their parents' level of education affected their educational attitude. University

education was the most common level of education in the participants' fathers. This was the same with regards to participants' mothers with slight decrease in the percent. Details are shown in table 3.

Table 3. Parenteral involvement in the educational process.

Variable		Frequency	Percent
Father's level of education	Primary school	25	12%
	Secondary school	33	15.9%
	University	150	72.1%
Mother's level of education	Primary school	30	14.4%
	Secondary school	65	31.3%
	University	113	54.3%
Parent's level of education affecting participants' educational attitude	No	126	60.6%
	Yes	82	39.4%
Parents' support during learning process	No	20	9.7%
	Yes	186	90.3%

3.4. Factors Affecting the GPA

When assessing the factors which influenced the GPA of the last semester; age, father's level of education, and participants who agreed that their parents' level of education affects their educational attitude differed with a statistical

significance. Details are shown in table 4. Only age and living conditions affected the CGPA with a statistical difference, unlike the GPA which was influenced by other factors. Details are shown in table 5.

Table 4. Factors affecting the GPA in the last semester (n=208).

Variable		GPA					P value
		Below 2	2 – 2.4	2.5 – 2.9	3 – 3.4	3.5 – 4	
Gender	Male	0	4	22	39	24	0.869
	Female	1	3	31	56	28	
Age	16 – 20 years	1	1	1	0	0	0.006
	21 – 23 years	0	4	43	81	40	
	Above 23 years	0	2	9	14	12	
Living	Family	1	6	38	63	30	0.716
	Student housing	0	1	11	23	18	
	With relatives	0	0	4	9	4	
Family income	10000-20000 SDG	0	1	3	8	4	0.608
	21000-50000 SDG	1	1	13	21	8	
	51000-100000 SDG	0	1	14	22	20	
	Over 100000 SDG	0	4	23	44	20	
Father's level of education	Primary school	0	0	9	14	4	0.044
	Secondary school	1	1	3	14	14	
	University	0	6	41	69	34	
Mother's level of education	Primary school	0	1	5	17	7	0.707
	Secondary school	1	3	15	28	18	
Parent's level of education affecting participants' educational attitude	University	0	3	33	50	27	0.043
	No	1	5	30	66	24	
Parents' support during learning process	Yes	0	2	23	29	28	0.556
	No	0	1	3	12	4	
	Yes	1	6	50	82	47	

Table 5. Factors affecting the cGPA in the last semester.

Variable		CGPA					P value
		Below 2	2 – 2.4	2.5 – 2.9	3 – 3.4	3.5 – 4	
Gender	Male	1	6	42	49	21	0.768
	Female	0	6	26	37	20	
Age	16 – 20 years	1	1	1	0	0	0.002
	21 – 23 years	0	6	56	74	32	
	Above 23 years	0	5	11	12	9	
Living	Family	1	8	51	52	26	0.042
	Student housing	0	4	13	21	15	
	With relatives	0	0	4	13	0	
Family income	10000-20000 SDG	0	1	6	7	2	0.609
	21000-50000 SDG	1	3	11	19	10	
	51000-100000 SDG	0	1	19	22	15	
	Over 100000 SDG	0	7	32	38	14	
Father's level of education	Primary school	0	0	9	13	3	0.082
	Secondary school	1	2	5	15	10	
	University	0	10	54	58	28	

Variable		CGPA					P value
		Below 2	2 – 2.4	2.5 – 2.9	3 – 3.4	3.5 – 4	
Mother's level of education	Primary school	0	2	6	18	4	0.110
	Secondary school	1	1	20	29	14	
	University	0	9	42	39	23	
Parent's level of education affecting participants' educational attitude	No	1	7	44	53	21	0.629
	Yes	0	5	24	33	20	
Parents' support during learning process	No	0	2	4	11	3	0.384
	Yes	1	10	64	73	38	

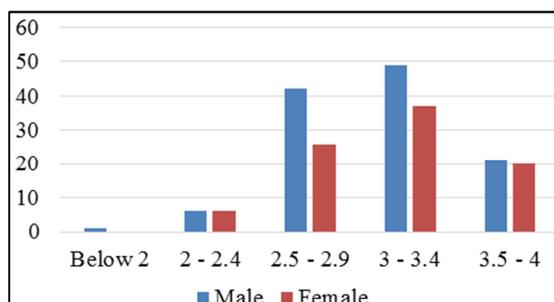


Figure 1. cGPA according to the gender (n=208).

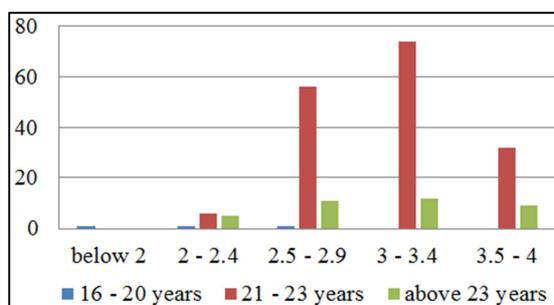


Figure 2. cGPA according to the age categories (n=208).

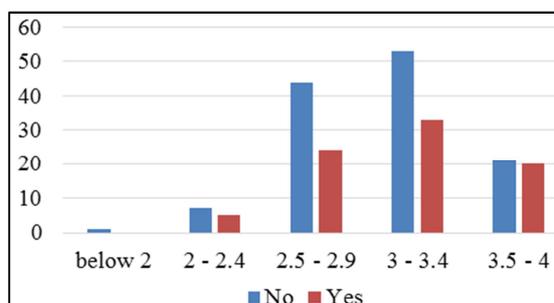


Figure 3. cGPA among participants who believe their parents' level of education affected their educational attitude (n=208).

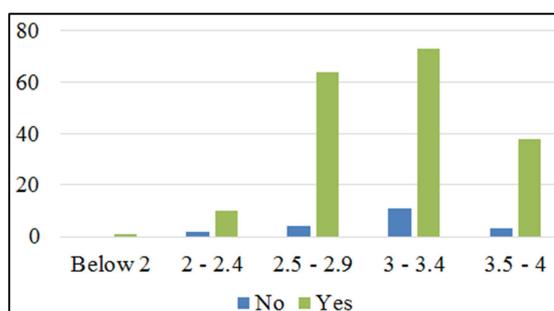


Figure 4. cGPA among participants whom their parents supported them during the learning process (n=208).

4. Discussion

According to Rothstein, Hill, and colleagues, children who were raised by parents with higher educational qualifications are more curious about learning than children whose parents had lesser educational qualifications. This study supports their findings. [37, 38].

In this study, it was discovered that the kind of living situation—with friends, family, or in student housing—had a big impact on GPA. This has a direct bearing on how the living situation affects the medical student. A student's wider ecology includes two essential Microsystems: interactions with peers and interactions with parents. When both contexts are taken into account, support for academic success in both can contribute separately (additively) to students' academic engagement and success, indicating that enhancing either environment would be beneficial for students' academic adjustment. Another option is for the parent and peer Contexts can interact in ways that protect children from the detrimental consequences of uninterested friends. Parents may convey to their children the significance of education through their discussion of university activities, helping to counteract any disengaged peers' negative ideals and attitudes.

Students from poor economic groups often have fewer educational privileges and do worse academically, even though this study demonstrated that family wealth does not significantly affect GPA [38].

The educational level of the fathers in this study has a big impact on the GPA of the medical students. Additionally, 39.4% of them said that their parents' educational background had an impact on their educational attitude, which was likewise found to significantly affect their GPA. In general, parents who have a high level of education are more actively engaged in their kids' education. To ensure that their kids always have time to read at home, they create a schedule for them. They help their kids with their schoolwork and with any difficult terms they come across in their studies. However, parents with advanced degrees constantly make an effort to give their kids educational resources that will help them study. It is significant to mention that parents with advanced degrees are always interested in their children's education. They even consult university officials over the performance of their children, whether it is improving or not. However, other research has shown that children of parents with lesser levels of education tend to perform poorly academically. It has been demonstrated that parents with lesser educational

backgrounds tend to place less value on their children's education than parents with higher educational backgrounds.

The cross-sectional nature of the data is one of the study's key drawbacks. It is impossible to tell how long a person has been at a certain SES level because this data was only collected once. For instance, a person's financial situation could have suddenly changed as a result of their parent's divorce or any other event. The full impacts of the new SES status might not have manifested themselves by the time of the survey in that situation.

5. Conclusion

Age, the educational level of the father, and the participants' agreement that their parents' educational status influences their educational attitude were all found to significantly affect GPA. This study gave the community information on socioeconomic standing and academic accomplishment, which can serve as a solid foundation for future research and improve the quality of academic life. Education's main objective is to provide pupils the information, brainpower, and practical skills they'll need to contribute to society. Therefore, it is essential to comprehend the factors affecting students' academic progress.

6. Recommendations

The university administrators should be informed of these findings so they can take care of the socioeconomic needs of their students. Students who are impoverished and from disadvantaged backgrounds should be given grants and scholarships. Additionally, these findings must to be distributed to relevant governmental sectors (eg. Ministry of higher education, ministry of finance). These industries are expected to develop plans to provide financial assistance to the underprivileged.

Conflict of Interest

All the Authors do not have any possible conflict of interest.

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