

The Relationship Between Parents' Education And Students' Academic Performance: A Statistical Study

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1.1 INTRODUCTION

1.1.1 Why this topic matters:

Academic performance plays a key role in shaping a student's future. It not only reflects their learning and understanding but also determines their chances of higher education and career success. In recent years, researchers and educators have shown growing interest in identifying the various factors that influence students' academic outcomes. Among these, family background- especially the education level of parents- is considered an important factor. This topic is significant because it explores whether The environment and support provided by educated parents actually reflect in their children's academic achievements,

1.1.2 How parental education might influence academic success:

Parental education is believed to have both direct and indirect effects on student performance. Educated parents may help their children with homework, encourage healthy study habits, and provide a learning-friendly atmosphere at home. They are also more likely to understand the value of discipline, time management, and emotional support in a child's academic journey. As a result, children of educated parents are expected to perform better in school. However, it's also possible that individual study habits, like how much time a student spends reading daily, could play a more critical role than parental background in some cases.

1.1.3 The purpose of the study:

The purpose of this study is to explore the effect of parents' education on students' academic performance, using data collected from 60 students. In addition to parental education, the study also considers factors such as type of school, parental occupation daily study time, private tuition and digital usage restrictions, Statistical analysis, including the chi-square test, was used to examine the relationships between these variables and students' examination percentages, The aim is to identify which factors are most closely associated with academic success and to better understand the relative importance of family support versus personal effort.

1.2 LITERATURE REVIEW

Parental education has long been recognized as a critical factor influencing children's academic outcomes. Numerous studies have demonstrated a strong correlation between the educational attainment of parents and the academic success of their children.

According to Davis-Kean (2005), higher levels of parental education are significantly associated with improved academic performance among children. Educated parents are more likely to foster environments that support learning through access to books, educational resources, and enriched language exposure at home. These parents also tend to engage more actively in their children's schooling, including helping with homework, attending school events, and maintaining communication with teachers (Jeynes, 2007).

Research by Dubow, Boxer, and Huesmann (2009) suggests that both maternal and paternal education contribute to academic success, though the mechanisms may differ. Mothers' education is often linked to children's early language development and reading abilities, while fathers' education has been shown to influence math performance and long-term academic aspirations.

In a cross-cultural study, Sirin (2005) found that parental education had a consistent and positive impact on academic achievement across diverse socioeconomic and ethnic groups. However, the strength of this relationship may vary by context; in lower-income families, the educational background of parents becomes an even more significant predictor due to limited external academic support systems.

Furthermore, studies highlight the indirect effects of parental education through socioeconomic status (SES). Parental education often determines occupational opportunities and income levels, which in turn influence the quality of schooling, availability of extracurricular activities, and general stability in a child's life (Coleman et al., 1966; Battle & Lewis, 2002).

1.3 OBJECTIVES OF THE STUDY

- i. To examine the effect of parents' educational qualifications on students' academic performance.
- ii. To compare the academic performance of students from different types of schools (government vs. private).
- iii. To assess whether father's or mother's education has a stronger influence on the child's exam results.
- iv. To analyze the relationship between daily study time and academic performance.
- v. To study the impact of private tutoring on students' academic achievements.
- vi. To understand whether restrictions on mobile usage or television watching affect student performance.
- vii. To identify patterns between parental occupation and children's educational outcomes.

1.4 METHODOLOGY

This study is based on data collected from 60 students studying in different schools. The main objective is to examine how various parental and personal factors influence the academic performance of students.

1.4.1 Sample Size:

Total number of students: 60

Students are from both government and private schools

1.4.2 Data Collection Method:

Data was collected using a structured questionnaire, which included both academic and family background details.

1.4.3 Variables Used in the Study:

The following variables were collected and analyzed:

- * Type of school (government/private)
- * Last examination percentage
- * Father's education qualification
- * Mother's education qualification
- * Fathers occupation
- * Mother's occupation
- * Daily reading time (in hours)
- * Whether the student has a private tutor
- * Restriction on mobile phone usage
- * Restriction on watching television

1.4.4 Data Analysis Tools:

- * The data was entered into Microsoft Excel for basic organization and visual graphing.
- * SPSS (Statistical Package for the Social Sciences) was used to perform statistical analysis.
- * A Chi-square test was applied to study the relationship between categorical variables (like parents' education and exam percentage).

1.4.5 Statistical Technique:

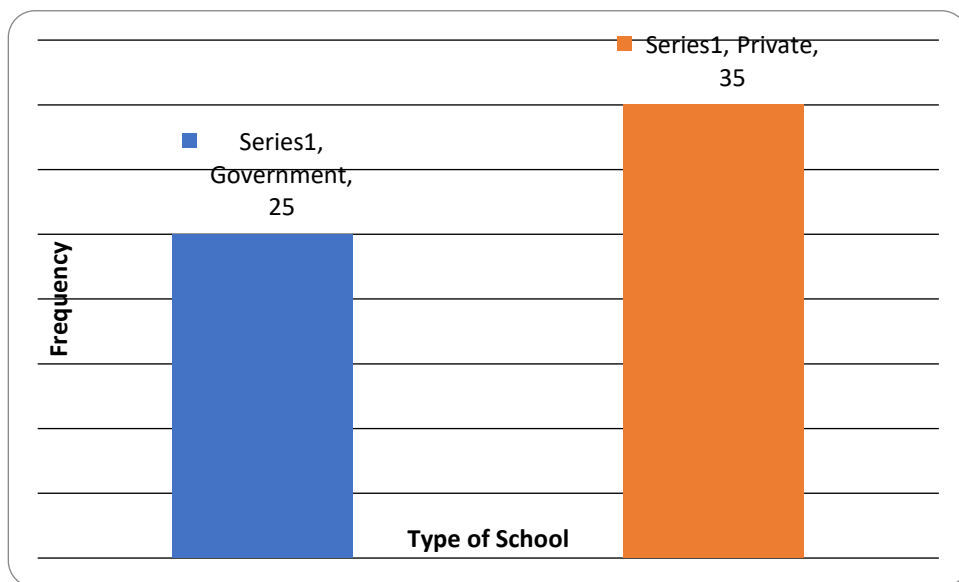
- * Chi-square test of independence was used to determine whether there is a statistically significant association between parents' education and students' academic performance.
- * The significance level (α) was set at 0.05.

2. RESULTS AND DISCUSSION

2.1 GRAPHICAL REPRESENTATION

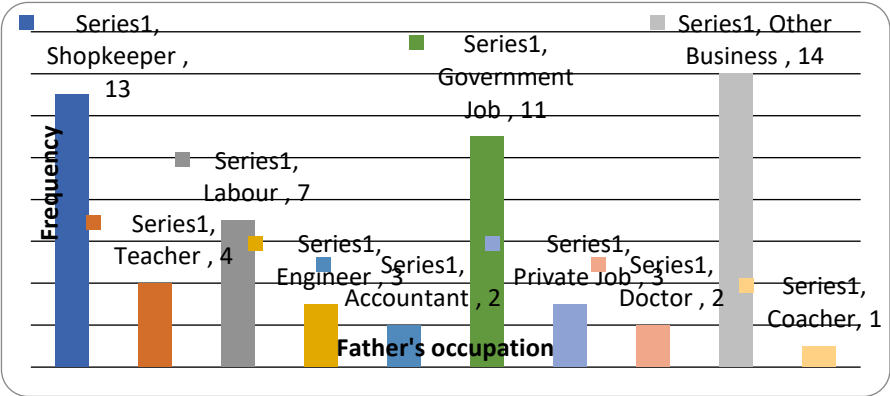
2.1.1 Graphical Representation of students' school type

Type of School	Frequency
Government	25
Private	35
Total	60



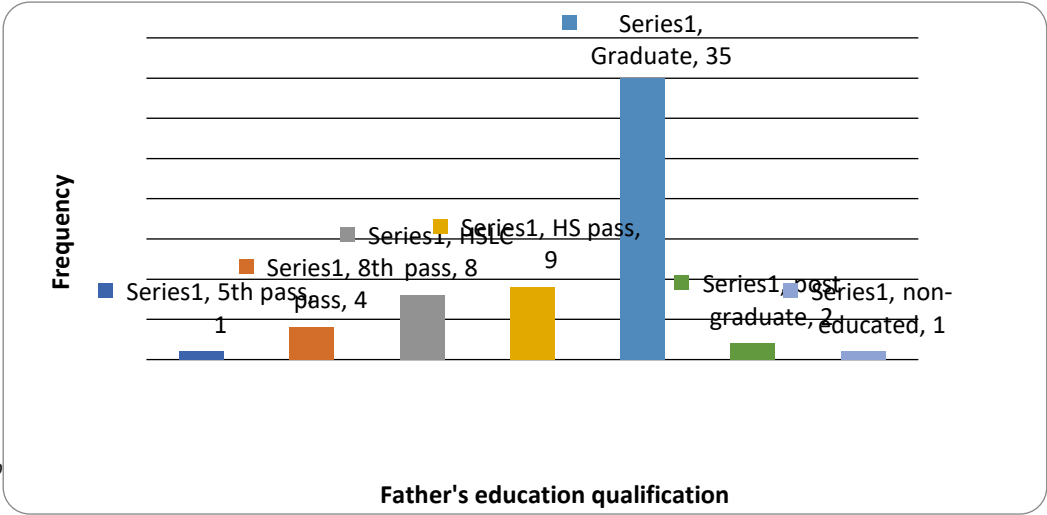
2.1.2 Graphical Representation of Father's occupation

Father's occupation	Frequency
Shopkeeper	13
Teacher	4
Labour	7
Engineer	3
Accountant	2
Government Job	11
Private Job	3
Doctor	2
Other Business	14
Coacher	1
Total	60



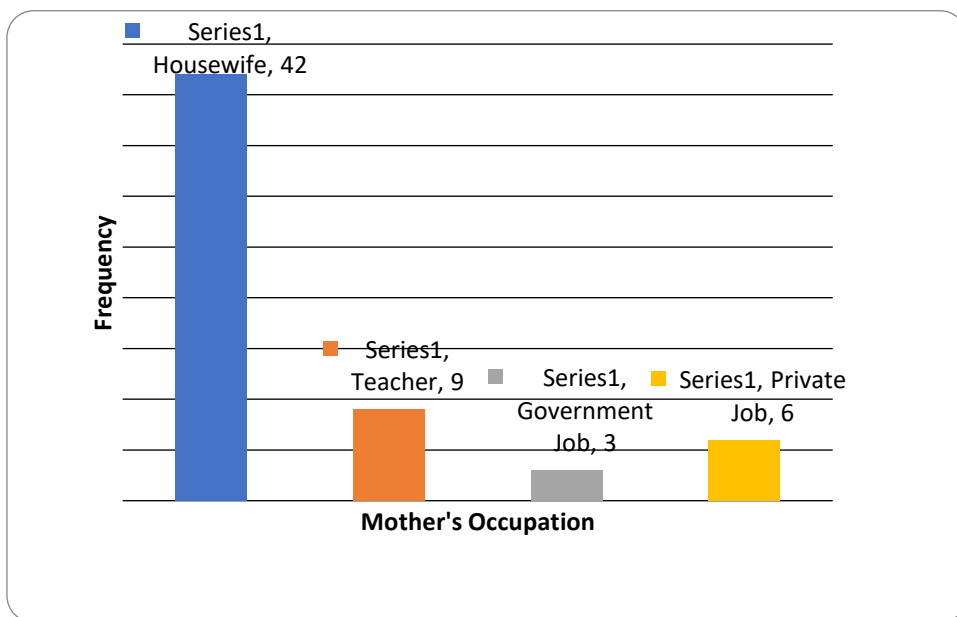
2.1.3 Graphical Representation of Father's education qualification

Father’s education qualification	Frequency
5th pass	1
8th pass	4
HSLC pass	8
HS pass	9
Graduate	35
post graduate	2
non-educated	1
Total	60



2.1.4 Graphical Representation of Mother's Occupation

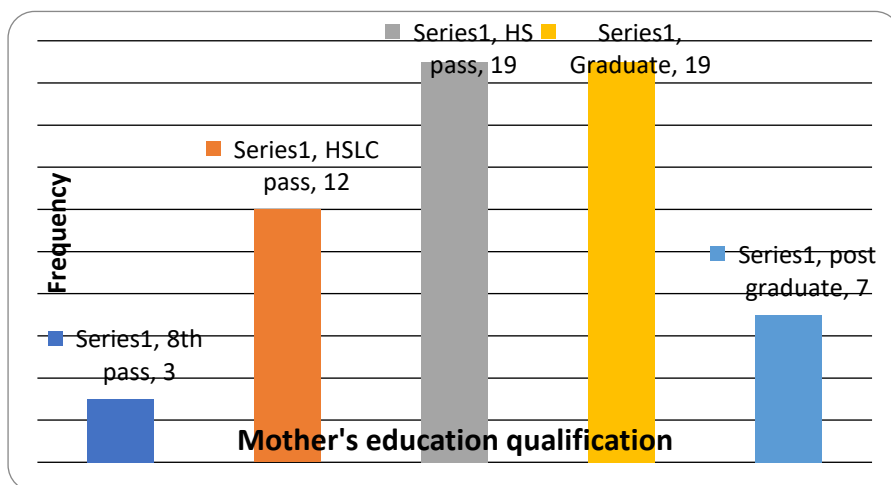
Mother's Occupation	Frequency
Housewife	42
Teacher	9
Government Job	3
Private Job	6
Total	60



2.1.5 Graphical Representation of Mother's education qualification

Mother's education qualification	Frequency
8th pass	3
HSLC pass	12
HS pass	19

Graduate	19
post graduate	7
Total	60



2.2 Analysis of Result

2.2.1 Between type of school and 1Academic Performance of the students:

Here,

H_0 : There is no association between Type of School and academic performance of students.

Against,

H_1 : There is association between Type of School and academic performance of students.

chi-square table:

	Value	df	p-value
Type of school*academic performance	43.681	44	485

Since, the p-value of the chi-square table is greater than 0.05

Therefore, we have reason accept the null hypothesis (H_0).

So, there is no association between Type of School and academic performance of students.

2.2.2 Between Father's Occupation and Academic Performance of the students:

Here,

H₀: There is no association between Father's Occupation and academic performance of students.

Against,

H₁: There is association between Father's Occupation and academic performance of students.

chi-square table:

	Value	df	P-value
Father's occupation * academic performance	442.657	440	455

Since, the p-value of the chi-square table is greater than 0.05

Therefore, we have reason accept the null hypothesis (H₀).

So, there is no association between Father's Occupation and academic performance of students.

2.2.3 Between Father's Education Qualification and Academic Performance of the students:

Here,

H₀ : There is no association between Father's Education Qualification and academic performance of students.

Against,

H₁: There is association between Father's Education Qualification and academic performance of students.

chi-square table:

	Value	df	P-Value
Fathers education qualification*academic performance	292198	264	.112

Since, the p-value of the chi-square table is greater than 0.05

Therefore, we have reason accept the null hypothesis (H₀).

So, there is no association between Father's Education Qualification and academic performance of students.

2.2.4 Between Mother's Occupation and Academic Performance of the students:

Here,

H₀: There is no association between Mother's Occupation and academic performance of students.

Against,

H₁: There is association between Mother's Occupation and academic performance of students.

chi-square table:

	Value	df	P-Value
Mother Occupation*academic performance	185.237	176	.302

Since, the p-value of the chi-square table is greater than 0.05

Therefore, we have reason accept the null hypothesis (H_0).

So, there is no association between Mother's Occupation and academic performance of students.

2.2.5 Between Mother's Education Qualification and Academic Performance of the students:

Here,

H_0 : There is no association between Father's Education Qualification and academic performance of students.

Against,

H_1 : There is association between Father's Education Qualification and academic performance of students.

chi-square table:

	Value	df	P-Value
Mothers education qualification*academic performance	191.280	176	.204

Since, the p-value of the chi-square table is greater than 0.05

Therefore, we have reason accept the null hypothesis (H_0).

So, there is no association between Mother's Education Qualification and academic performance of students.

2.2.6 Between Daily Reading Time and Academic Performance of the students:

Here,

H_0 : There is no association between Daily Reading Time and academic performance of students.

Against,

H_1 : There is association between Daily Reading Time and academic performance of students.

chi-square table:

	Value	df	P-Value
Daily reading time*academic performance	391.262	308	.001

Since, the p-value of the chi-square table is less than 0.05

Therefore, we have reason reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1).

So, there is association between Daily Reading Time and academic performance of students.

2.2.7 Between Having Private Tutor and Academic Performance of the students::

Here,

H_0 : There is no association between Having Private Tutor and academic performance of students.

Against,

H_1 : There is association between Having Private Tutor and academic performance of students.

chi-square table:

	Value	df	P-Value
Having private Tutor *academic performance	44.841	44	.436

Since, the p-value of the chi-square table is greater than 0.05

Therefore, we have reason accept the null hypothesis (H_0).

So, there is no association between Having Private Tutor and academic performance of students.

2.2.8 Between Having Restriction on Using Mobile Phones and Academic Performance of the students:

Here,

H_0 : There is no association between Having Restriction on Using Mobile Phones and academic performance of students.

Against,

H_1 : There is association between Having Restriction on Using Mobile Phones and academic performance of students.

chi-square table:

	Value	df	P-Value
restriction on using mobile phone *academic performance	44.314	44	.458

Since, the p-value of the chi-square table is greater than 0.05

Therefore, we have reason accept the null hypothesis (H_0).

So, there is no association between Having Restriction on Using Mobile Phones and academic performance of students.

2.2.9 Between Having Restriction on Watching TV and Academic Performance of the students:

Here,

H_0 : There is no association between Having Restriction on Watching TV and academic performance of students.

Against,

H_1 : There is association between Having Restriction on Watching TV and academic performance of students.

chi-square table:

	Value	df	P-Value
restriction on watching TV*academic performance	101.562	88	.153

Since, the p-value of the chi-square table is greater than 0.05

Therefore, we have reason accept the null hypothesis (H_0).

So, there is no association between Having Restriction on Watching TV and academic performance of students.

2.3 Limitations of the Study

i) Small Sample Size

The study was conducted on a sample of only 60 students, which may not be representative of the entire student population. A larger sample would have increased the generalizability of the results.

ii) Self-reported Data

The information regarding reading time and parents' education was collected through self-reporting, which may be subject to bias or inaccuracies due to memory errors or social desirability.

iii) Limited Variables Considered

The study focused only on a few factors like parents' education and reading time. Other important factors like socioeconomic status, type of school, teacher quality, or learning environment were not included.

iv) Cross-sectional Nature

The study was cross-sectional and observational in nature, meaning it only captured a snapshot in time. Hence, it cannot establish a causal relationship

v) Academic Performance Measurement

Academic performance was measured using grades or test scores, which may not fully reflect a student's overall academic ability or potential.

vi) Time Constraints only association.

Due to limited time, the data collection and analysis were restricted, which may affect the depth of the findings.

3.1 CONCLUSION:

3.1 Summary of Key Findings

1) A statistically significant relationship was found between daily reading time and students' academic performance ($p = 0.001$).

Students who spent more time reading daily tended to achieve higher percentages in their examinations. This indicates that regular reading habits have a strong positive impact on academic success.

2) No significant association was found between students' academic performance and the following variables:

Type of school ($p = 0.485$)

Father's occupation ($p = 0.455$)

Father's education qualification ($p = 0.112$)

Mother's occupation ($p = 0.302$)

Mother's education qualification ($p = 0.204$)

Having a private tutor ($p = 0.436$)

Restrictions on mobile phone use ($p = 0.458$)

Restrictions on watching TV ($p = 0.153$)

These results suggest that parental background, external tutoring, and certain lifestyle restrictions did not have a statistically measurable influence on students' academic performance in this sample.

3) Among all variables studied, daily reading time was the only factor that showed a strong and statistically significant impact on students' percentage scores.

This highlights the importance of encouraging consistent study habits to improve academic outcomes.

3.2 Contribution of the study

1) Educational Policy and Planning: The findings can guide policy makers in designing targeted educational programs and interventions that consider family background, particularly parental education, as a key factor influencing student achievement.

2) Parental Involvement: The study highlights the importance of parental education in shaping students' academic success, encouraging schools and educators to develop strategies that foster greater parental involvement and support for students, especially in communities where parents have lower educational attainment.

3) Resource Allocation: Educational institutions and stakeholders can use the results to allocate resources more effectively, offering additional support and mentoring to students who may be at risk due to lower parental educational levels.

4) Academic Counselling and Support: Counsellors and educators may leverage the insights to better understand students' challenges and tailor academic support and motivation techniques according to the influence of family educational background.

5) Future Research: This study lays a foundation for further research on the interplay between socioeconomic factors and educational outcomes, encouraging more nuanced investigations into how various aspects of parental background affect student learning.

3.3 Challenges Faced:

While doing this project, several challenges were encountered. Some students were not comfortable sharing personal details like their marks, parents' education level or occupation,

daily reading time properly which made it hard to collect complete information. Time was also a problem as it was not very easy to find all the students and collect the data on time. Additionally, organizing and analyzing the data using statistical tools like SPSS, MS Excel needs careful

attention and technical proficiency. Even with these difficulties every effort was made to maintain the quality and reliability of the project. And as students, we faced financial constraints, which limited our ability to print questionnaires and travel extensively for data collection due to fuel costs.

3.4 Suggestion for future research:

A valuable suggestion for future research on the project "Effect of Parents' Education on Students' Academic Performance" would be:

Explore the mediating and moderating variables that influence the relationship between parents' education levels and students' academic performance. For example:

Future research could investigate how factors such as parental involvement in schooling, socioeconomic status, access to educational resources, and students' self-motivation mediate or moderate the effect of parents' education on academic performance. This would provide a deeper understanding of the mechanisms through which parental education impacts student outcomes and could inform more targeted interventions.

References

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Chapter-5

Appendices

EFFECT OF PARENTS' EDUCATION ON STUDENTS ACADEMIC PERFORMANCE

Questionnaire

Nome of the Student:.....

Class:..... Roll No.:.....

Name of School:.....

Type of School: Government ☐ Private ☐

Last Examination Percentage:.....

Father's Occupation:.....

Father's Education Qualification:.....

Mother's Occupation:.....

Mother's Education Qualification:.....

Daily reading time of the student:.....hour(s)

Do you have any private tutor: Yes ☐ No ☐

Whether your parents have ability to check your day to day academic activity:

Yes ☐ No ☐

Whether your parents regularly check your academic activity: Yes ☐ No ☐

☐

Do you parents talk to you about your higher studies: Yes ☐ No ☐

☐

Reading habits of Parents:.....

Do your parents have Smart Phones: Yes ☐ No ☐

☐

Average daily using time of phone:.....hour(s)

Do you have any restriction on:

1) Using of mobile phone: Yes ☐ No ☐

if yes, daily using time:hour(s)

2) Watching TV: Yes ☐ No ☐

If yes, daily watching time:.....hour(s)

3) Outdoor games: Yes ☐ No ☐

If yes, daily playing time:.....hour(s)

4) Video games: Yes ☐ No ☐

if yes, daily playing time:.....hour(s)

Habit of reading non- academic book: Yes ☐ No ☐

1) If yes, who inspire you to read:.....

2) Name of a book that you have read recently.....

Do you have any restrictions to spent time outside with friends: Yes ☐ No ☐

☐

If yes, generally how much time it is allowed by your parents:hour(s)