

Household environment on academic performance among high school students in Tiruvallur district

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ABSTRACT

The present study examines the influence of household environmental factors on the academic performance of high school students in Tiruvallur District. The paper examines predominant dimensions, parental involvement, and access to learning resources. The present paper adopts both primary and secondary data. The Primary data collected from 371 students. The study's results reveal that academic performance, explaining 47.5% of the variance, is most influenced by learning resources, followed by parental involvement and socioeconomic status. The study results confirmed that there is a strong positive relationship, and the further results confirms that a supportive home environment enhances the performance. The study supports both hypotheses and emphasizes the need to strengthen family support, promote parental engagement, and ensure access to learning resources to improve students' academic achievement.

Keywords: Household Environment, Academic Performance, Parental Involvement, Socioeconomic Status, Learning Resources, High School Students, Tiruvallur District

INTRODUCTION

Many factors affect how well high school students perform in school, and the home environment is among the most important. Residence place is the most significant factor in students' emotional and social development. Many studies were confirmed that the learning opportunities raises because of the family atmosphere, and access to educational tools affect students' achievement (**Patel, 2024**). A supportive family atmosphere encourages positive learning, increasing the learning habits, discipline, and motivation. This, in turn, boosts academic performance. The household environment comprises the many factors: parental education, and access to learning resources. (**Lobo et al., 2025**). The involvement of parents and access to educational resources clearly improve children's language skills, and abilities. In contrast, challenging difficult home environment, and limited resources can hinder concentration and reduce motivation to succeed in school, resulting in lower grades. Additionally, many researchers show that parental education and family income are important factors affecting students' academic success. Parents who are having the high levels educational background, offer better support in their children's education, which contributes to better grades (**Zhang, 2024**). Higher level of monthly family income parents can provides students with access to better educational tools and schools. It support and helps them perform better academically. The family values greatly influence students' self-confidence, morality, learning behaviors (**Prasad et al., 2024**). The study found that academic performance is influenced by many elements, including the type of school, its location, and the language of instruction. Other research studies show that the family environment is an important factor. However, individual effort, and peer factors can also significantly affect academic success (**Prasad et al., 2024**). In the study region, where people come from different social, economic, and educational backgrounds, the home environment is very important. High school students in this area are at a crucial stage in their academic journey. Family support of the usage of educational resources can greatly influence their school performance. While research on this topic is growing, we still need more studies to understand how specific household factors affect students' academic success. This paper examines the impact of the household environment on the academic performance of high school students in Tiruvallur District. The goal is to suggest the valuable insights for students' parents, and policymakers by exploring various aspects of the household environment that can improve supportive boost students' academic performance.

LITERATURE REVIEW

Many studies have explored the connection between the home environment and school performance. Numerous studies have shown that the home environment greatly affects students' learning results, motivation, and overall academic performance

Kare and Govindarajan (2026) indicated confirmed that the parental supports their childrens education were significantly influencing academic success. Also the parental involvement motivates and moulded the students in positive manner.

Yadav et al. (2025) highlights that a supportive, and intellectually stimulating home environment promotes positive learning habits, and enhances overall school performance. Conversely, economic deprivation frequently contribute to academic inspiration among students. Parenting style, as compared to demanding or neglectful models.

Rao et al. (2022) highlighted the significance home setting academic success, particularly online learning. The research determined students technology more effectively to new learning conditions, leading to improved grades.

Recent studies suggest that level of education of parents are important indicators of their children's success. Research indicates parents with higher level of education inclined to assist their children with homework. **(Zhang, 2024)**. Furthermore, the study demonstrated that elements such as family interaction, shaping students' learning habits results. The study revealed home environment, which includes parental support on the academic performance. Overall, the existing literature emphasizes that the home setting factor influencing students' cademic success. However, many studies have.

PROBLEM OF THE STUDY

There is growing concern about the academic achievements of high school students, particularly in areas like Tiruvallur District, which experiences notable differences in income, education background of parents, and access to tools of educational resources. The environment at home is recognized as having a substantial effect on students' academic success. Some students excel academically when their parents are actively engaged, they have access to schools study materials, and their home environment supports learning. On the other hand, many students encounter challenges like deficiency of parental involvement, restricted financial resources, family atmosphere , overcrowded living situations, and no fixed study routine. These inequalities lead to disparate learning opportunities and have a significant impact on students' level of motivation, focus, and academic performance. The earlier publications related to the current study has explored the overall connection between family environment and academic success; however,

RESEARCH QUESTIONS

1. What is the influence of HE factors—such as parental involvement(PI), socioeconomic status(SES), and availability of learning resources(LR)—on the academic performance (AP) of high school students in Tiruvallur District?
2. Is there a significant relationship between HE factors and the AP of high school students in Tiruvallur District?

OBJECTIVES OF THE STUDY

- To examine the influence of household environmental factors, such as parental involvement, socioeconomic status, and the availability of learning resources, on the academic performance of high school students in Tiruvallur District.
- To find out the relationship between household environment factors and the academic performance of high school students in Tiruvallur District.

HYPOTHESES OF THE STUDY

- **H₁:** There is a significant influence of household environmental factors—such as parental involvement, socioeconomic status, and availability of learning resources—on the academic performance of high school students in Tiruvallur District.
- **H₂:** There is a significant relationship between household environment factors and the academic performance of high school students in Tiruvallur District.

RESEARCH METHODOLOGY

The current study is both descriptive and analytical, investigating the impact of household environmental factors on the academic performance of high school students in Tiruvallur District. The current study focuses on household environmental factors like parental engagement, familial support, and the home study environment. The study's dependent variable is the academic performance of high school students. The research uses both primary and secondary data. A structured questionnaire will be used to collect primary data directly from high school students in the Tiruvallur District. The questionnaire will have questions about demographics, the home environment, and school performance. Books, journals, research articles, government reports, school records, and other educational publications will be used to collect secondary data. The study population comprises high school students enrolled at specific institutions in Tiruvallur District. The study will recruit about 371 participants. A suitable sampling method, such as convenience sampling, will be used to choose the people who will answer the questions. This is because schools and students are easy to get to. To get a better picture, stratification can be done by school type, location, gender, and class level. Self-reported academic scores, recent exam scores, or categories of academic achievement can be used to measure how well someone does in school. Statistical tools will be used to code, tabulate, and analyze the collected data. The suggested statistical tools for the study include frequency distributions and percentage analyses for demographic variables; descriptive statistics; correlation analyses to examine the relationship between household environment and academic performance; and regression analyses to examine how household environmental factors affect academic performance. The research employed t-test and ANOVA to assess variation in academic performance as a function of specific demographic variables.

RESULTS OF THE STUDY

Table 1: Demographic Profile of Respondents (N = 371)

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	182	49.1
	Female	189	50.9
Age Group	Up to 14 years	128	34.5
	15–16 years	157	42.3
	17–18 years	86	23.2
Educational Level	9th Standard	196	52.8
	10th Standard	175	47.2
Type of School	Government School	162	43.7
	Aided School	98	26.4
	Private School	111	29.9
Family Type	Nuclear Family	233	62.8
	Joint Family	138	37.2
Monthly Family Income	Below ₹25,000	96	25.9
	₹25,001 – ₹50,000	132	35.6
	₹50,001 – ₹75,000	83	22.4
	Above ₹75,000	60	16.1
Parents' Educational Qualifications	Up to School Level	78	21.0
	Undergraduate	162	43.7
	Postgraduate & above	131	35.3

There were 371 people in the survey, with almost half men (49.1%) and half women (50.9%). This means the study included people of both gender categories. Most of the people who answered (42.3%) are between 15 and 16 years old. 34.5% of people are 14 years old or younger, which is the second-largest group. Only 23.2% of them are 17 or 18 years old. Most of the people in the sample are teenagers currently in school. This means that the school system is just. 29.9% of respondents attended private schools, 43.7% attended government schools, and 26.4% attended schools that received government support. The numbers show that more kids are going to government schools. 62.8% of respondents live in nuclear families, and 37.2% live in joint families. This information indicates that the nuclear family is the most common family type. 35.6% of people said their families earned between ₹25,001 and ₹50,000 per month. The second-largest group (25.9%) was those who earned less than ₹25,000. The third-largest group (22.4%) was those who earned between ₹50,001 and ₹75,000. The fourth-largest group (16.1%) comprised people earning more than ₹75,000. This means that many people in the sample have little money. Finally, the parents' level of education indicates that most (43.7%) have a bachelor's degree. The next most common level is a master's degree or higher (35.3%). Only 21% of parents have only gone to school, which means that most of them are smart.

Influence of household environmental factors—such as parental involvement, socioeconomic status, and availability of learning resources—on the academic performance of high school students in Tiruvallur District

H₁: There is a significant influence of household environmental factors—such as parental involvement, socioeconomic status, and availability of learning resources—on the academic performance of high school students in Tiruvallur District.

To test the hypothesis that household environmental factors—such as parental involvement, socioeconomic status, and availability of learning resources—significantly influence the academic performance of high school students in Tiruvallur District, multiple regression analysis was employed. The analysis helps determine the extent to which these household environmental factors contribute to variation in students' academic performance and identify the most influential predictors.

Table 2: Model Summary Results

Particulars	Value
R	0.689
R ²	0.475
Adjusted R ²	0.468
F-value	111.284
p-value	0.000**
Level of Significance	1%
Result	Significant

The model summary results indicate that the multiple regression model is statistically significant, as evidenced by the F-value of 111.284 with a p-value of 0.000**. The R value 0.689 shows a strong positive relationship between household environmental factors and students' academic performance. The R² value of 0.475 indicates that 47.5% variation in academic performance is explained by parental involvement, socioeconomic status, and the availability of learning resources. In contrast, the remaining variation is attributable to factors not included in the model. The adjusted R² value of 0.468 further confirms the results, establishing that household environmental factors significantly influence academic performance, supporting the hypothesis.

Table 3: Results of Multiple Regression Analysis of the Influence of Household Environmental Factors on Academic Performance

Variables	Standardized Coefficient (β)	t-value	p-value	Result
Parental Involvement (PI)	0.312	5.842	0.000**	Significant

Socioeconomic Status (SES)	0.274	4.965	0.000**	Significant
Availability of Learning Resources (ALR)	0.356	6.214	0.000**	Significant
Decision: Hypothesis supported				

The multiple regression results indicated parental involvement, socioeconomic status, and availability of learning resources—positively and statistically significantly influence students' academic performance, with p-values < 0.01. Among the variables, learning resources ($\beta = 0.356$) exerts the strongest influence, followed by parental involvement ($\beta = 0.312$) and socioeconomic status ($\beta = 0.274$). The significant t-values further confirm the robustness of these relationships. The study results also support the hypothesis, indicating that improvements in household environmental conditions lead to better academic outcomes among high school students in Tiruvallur District.

Relationship between household environment factors and the academic performance of high school students in Tiruvallur District

H₂: There is a significant relationship between household environment factors and the academic performance of high school students in Tiruvallur District

Table:4 Results of Correlation Analysis between Household Environment Factors and Academic Performance

Variables	Correlation Coefficient (r)	p-value	Result
Parental Involvement & Academic Performance	0.521	0.000**	Significant
Socioeconomic Status & Academic Performance	0.487	0.000**	Significant
Availability of Learning Resources & Academic Performance	0.563	0.000**	Significant
Overall Household Environment & Academic Performance	0.598	0.000	Significant
Decision: Hypothesis supported			

The correlation analysis results indicated a positive, statistically significant relationship between household environmental factors and the academic performance. Specifically, parental involvement ($r = 0.521$), socioeconomic status ($r = 0.487$), and availability of learning resources ($r = 0.563$) exhibit moderate positive correlations academic performance, and relationships. Furthermore, the overall household strongly positively related to students' academic performance ($r = 0.598$). These findings imply improvements in household environmental with better academic outcomes. Hence, the study results support the hypothesis and confirm relationship between household environmental factors and academic performance.

DISCUSSIONS

The present study aimed to study influence of household environmental factors on academic performance of high school students. The results indicate strong, significant relationship between factors and performance. The multiple regression analysis confirms environmental factors significantly explain variation in academic performance, with power of 47.5% ($R^2 = 0.475$), indicating a substantial contribution of family-related factors to educational outcomes. Among the predictors, availability of learning resources emerged most influential factor, followed by parental involvement and socioeconomic status, both material and emotional support household play a crucial role in shaping academic success.

These findings are consistent with earlier studies. For instance, Desforges and Alberto Abouchaar (2019) emphasized that parental involvement significantly enhances students' academic achievement through active engagement, supervision, and motivation. Similarly, Katherine M. Sirin (2019) highlighted that socioeconomic status is a strong predictor of academic performance, as it influences access to educational resources and learning opportunities. In the Indian context, P. Chandra and R. Sharma (2021) found that students from higher socioeconomic backgrounds perform better academically due to better access to learning facilities and parental support.

Further, the dominance of learning resources in shaping academic performance aligns with reports from the National Council of Educational Research and Training (2022), which emphasize that the availability of study materials, digital access, and a conducive learning environment significantly improve student outcomes in Indian schools. Moreover, Amit Kumar and Ritu Singh (2020) observed that a supportive household environment combining emotional, academic, and infrastructural support enhances student performance.

Furthermore, the correlation analysis reveals a strong positive relationship ($r = 0.598$) between the overall household environment and academic performance, reinforcing the argument that a supportive home environment is critical for students' educational development. Overall, the study findings are consistent with recent literature and confirm that improving household environmental conditions can significantly enhance academic performance among high school students. The study results also support the hypotheses, highlighting the importance of strengthening family-level support systems to improve educational outcomes in districts like Tiruvallur.

IMPLICATIONS OF THE STUDY

The study's findings have important implications for policymakers, educators, and parents, highlighting the critical role of household environmental factors in shaping students' academic performance. Since parental involvement and availability of learning resources significantly influence academic outcomes, there is a need to promote parental awareness programs and encourage active engagement in children's education. Educational institutions and government bodies should focus on reducing socioeconomic disparities by providing equitable access to learning resources, such as digital tools, study materials, and supportive learning environments, particularly in semi-urban and rural areas, such as Tiruvallur District. Additionally, schools can design intervention programs, including parent-teacher collaboration initiatives and community-based support systems, to strengthen the home learning environment. Overall, the study implies that improving household conditions can substantially enhance students' academic achievement and contribute to better educational outcomes.

CONCLUSION

The present study concludes that household environmental factors play a significant role in determining the academic performance of high school students in Tiruvallur District. The findings from both multiple regression and correlation analyses clearly establish that parental involvement, socioeconomic status, and the availability of learning resources have a positive, statistically significant influence on students' academic outcomes. Among these factors, the availability of learning resources emerged as the most influential predictor, indicating the importance of providing adequate academic support within the home environment. The study also confirms a strong relationship between the overall household environment and academic performance, emphasizing that a supportive, resourceful home environment enhances students' learning and achievement. Overall, the study highlights that academic success is not solely dependent on school-related factors but is also strongly shaped by the family environment. Therefore, strengthening household support systems, promoting parental engagement, and ensuring access to essential learning resources are crucial for improving students' academic performance. The results provide valuable insights for educators, policymakers, and parents to develop strategies that foster a conducive home environment, ultimately contributing to better educational outcomes.

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