

Parents' Educational Level and their Occupation as Predictors of Scholastic Performance in Mathematics of Higher Secondary School Students

Dr. M. Nandhini

Chennai, Tamil Nadu, India

ABSTRACT

The Present Study has been specifically intended to study Parents' Educational Level and their Occupation in relation to Academic Achievement in Mathematics of Higher Secondary School Students. Survey Method is employed in this study. Sample of the Study is comprised of 1050 Higher Secondary School Students. Simple Random Sampling Method is adopted. The relative contribution of personal variables (Education of the Father, Education of the Mother, Occupation of the Father, Occupation of the Mother), and Research variable (Academic Achievement in Mathematics) are investigated in this study. For the purpose of present study, 42 schools have been selected from Chennai District. 1050 students were selected from 42 schools (12 Government schools, 14 Government Aided schools and 16 Private schools). Thus, in the present study, different Types of Schools such as Boys, Girls and Co-education were selected randomly. Each student was provided with a booklet containing Personal Data Sheet. There was a provision in the front page for the students to fill their Higher Secondary Mathematics Marks secured in the Board Exam. The formulated hypotheses were tested using Descriptive Analysis and Differential Analysis. Based on the Results, it shows that Parents' Educational Level and their Occupation as Predictors of Scholastic Performance in Mathematics of Higher Secondary School Students.

KEYWORDS: Higher Secondary School Students, Educational Level, Occupation, Academic Achievement in Mathematics, Descriptive Analysis and Differential Analysis.

1. INTRODUCTION

Mathematics achievement plays a very important role in the attainment of the ideal of harmonious development of a student. With the growing advancement in science and technology, mathematics has become so important that every parent today sets high goals for the students to achieve. Achievement thus means all those behavioral changes, which take place in the individual as a result of learning experience of various kinds. Mathematics achievement refers to the degree or level of success or proficiency attained in some specific areas concerning mathematics. In general, it refers to the score obtained in the annual exams. Predictors for students' mathematical achievement are classified under two categorical factors: the psychological and the mathematical factors. (Peng & Kheong, 1996)

Mathematics Achievement may be defined as "a product which can be measured by means of achievement test" (Van den Aardweg, 1988). It is the amount of knowledge and skills acquired after

certain instruction or training in the related subject. Reber (1985) has explained achievement as “accomplishment or the attaining of a goal.” Teaching of all the subjects starts with some instructional aim and goal. These aims are achieved after the teaching of certain content of that subject.

Associated variables and related research studies in relation to Academic Achievement in Mathematics

TABLE 1

S. No.	Variables	Researcher’s Name by which the variables studied in relation to Academic Achievement in Mathematics
1	Parents’ Education	Santhamma (1996), Srinivasan (1999) O,Dwyer (2005), Mustafa (2009), Kodippili (2011), Ali Imam(2015), Cascella (2020), Rajendra (2020)
2	Parents’ Occupation	Prabha (1992), Santhamma (1996), Patel (1997), Akinsanya(2014), Ali Imam(2015) and Rajendra (2020)

**2. OPERATIONAL DEFINITION OF KEY TERM
ACADEMIC ACHIEVEMENT IN MATHEMATICS**

Academic Achievement in Mathematics refers to the mathematics marks secured in the Board Exam.

3. OBJECTIVES OF THE STUDY

- To find out whether there is any significant difference in Academic Achievement in Mathematics of Higher Secondary School Students with respect to the following Demographic Variables:
 - a) Education of the Father
 - b) Education of the Mother
 - c) Occupation of the Father
 - d) Occupation of the Mother

4. HYPOTHESES OF THE STUDY

- There is no significant difference in Academic Achievement in Mathematics of Higher Secondary School Students with respect to the following Demographic Variables:
 - a) Education of the Father
 - b) Education of the Mother
 - c) Occupation of the Father
 - d) Occupation of the Mother

5. DISTRIBUTION OF THE SAMPLE

The distribution of the sample is presented in Table 2

TABLE 2

VARIABLES	CATEGORY	FREQUENCY	PERCENTAGE
EDUCATION OF THE FATHER	Uneducated	113	10.8
	School Level	588	56.0

	College Level	349	33.2
EDUCATION OF THE	Uneducated	122	11.6
MOTHER	School Level	591	56.3
	College Level	337	32.1
OCCUPATION OF THE	Daily wages	343	32.7
FATHER	Private	329	31.3
	Government	107	10.2
	Self-Employed	271	25.8
OCCUPATION OF THE	Home Maker	765	72.9
MOTHER	Daily wages	82	7.8
	Private	121	11.5
	Government	41	3.9
	Self-Employed	41	3.9
	TOTAL SCORE	1050	100

FIGURE 1

Distribution of Sample with respect to Education of the Father

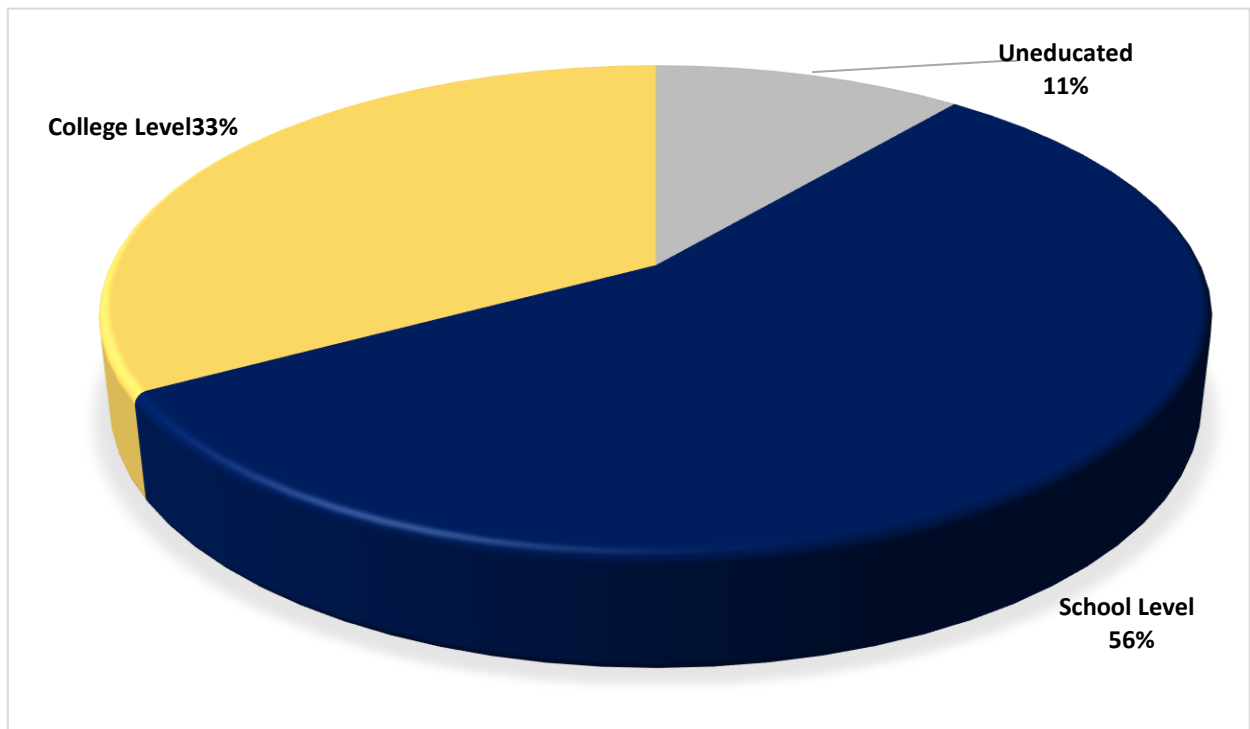


FIGURE 2
Distribution of Sample with respect to Education of the Mother

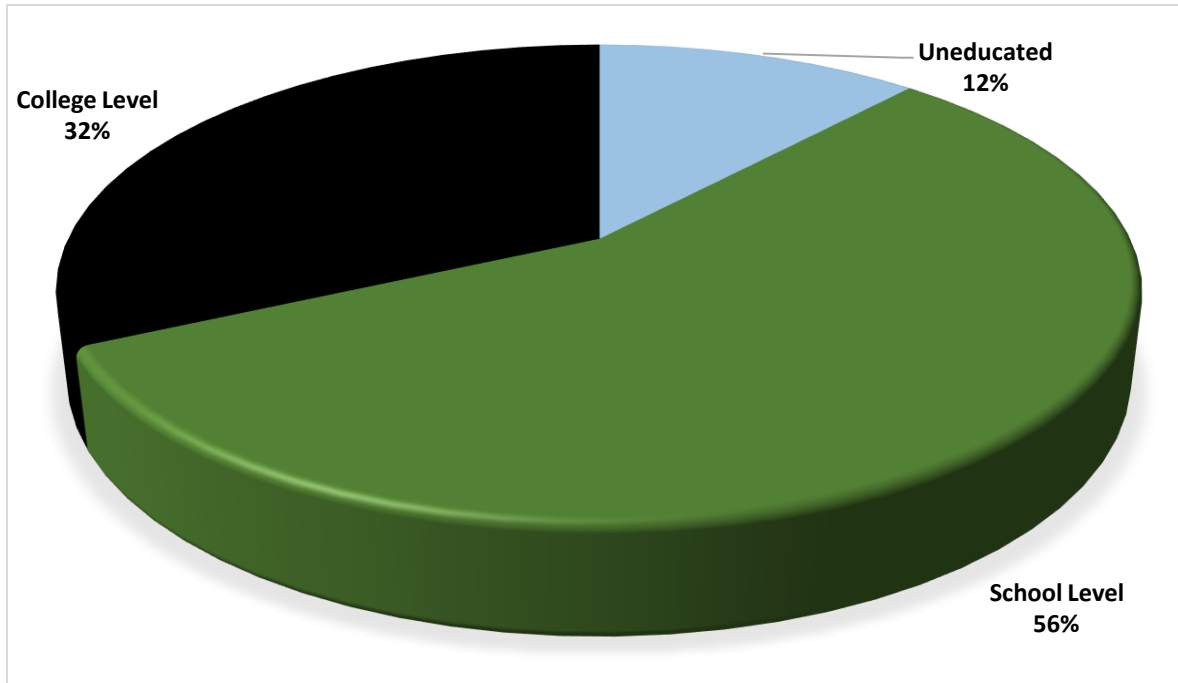


FIGURE 3
Distribution of Sample with respect to Occupation of the Father

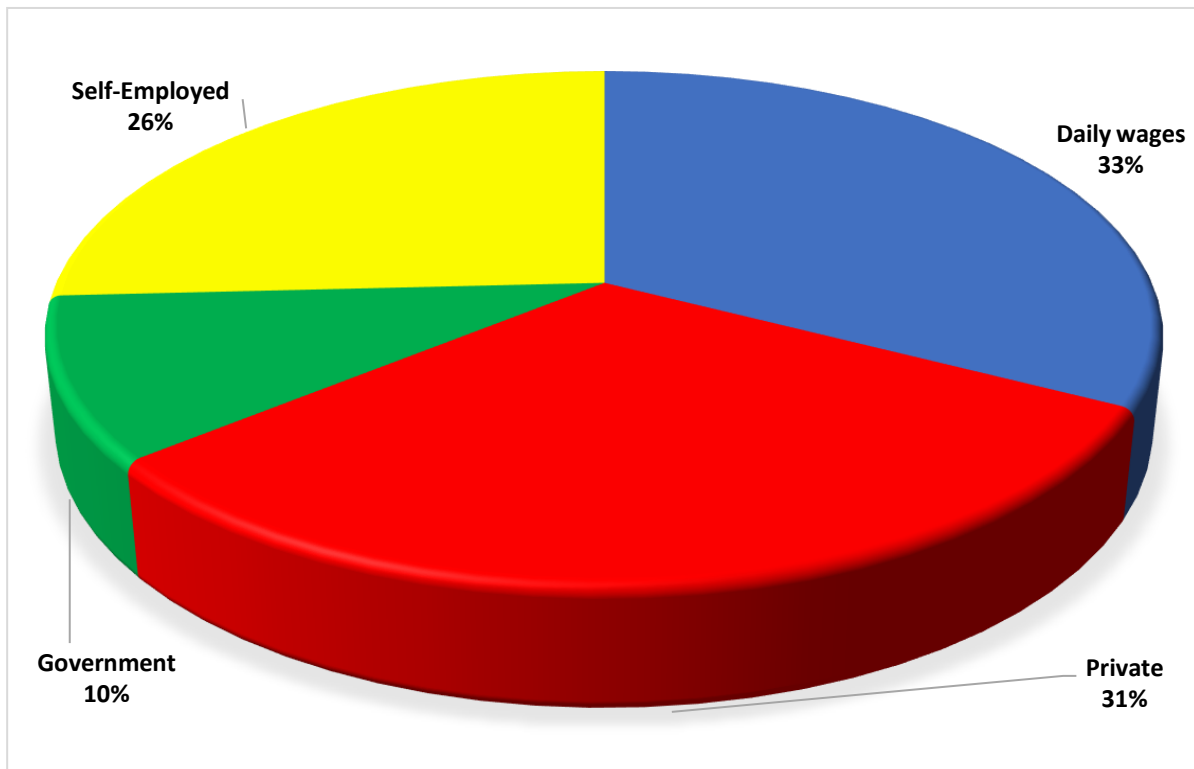
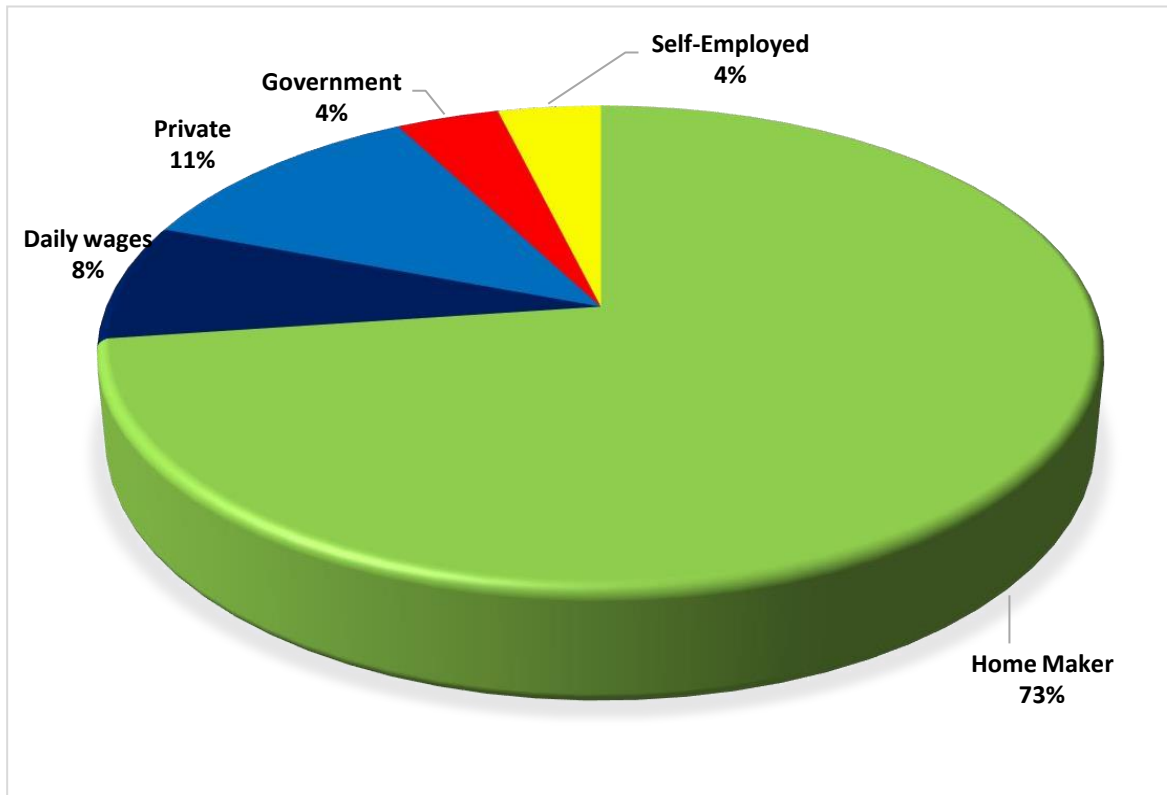


FIGURE 4
Distribution of Sample with respect to Occupation of the Mother



6. DATA ANALYSIS AND INTERPRETATION

Academic Achievement in Mathematics with respect to the Father's Educational Qualification

The Mean, Standard Deviation and F-ratios were calculated for the Academic Achievement in Mathematics with respect to the Father's Educational Qualification and the same is presented in Table 3.

Table 3 Summary of Results of Academic Achievement in Mathematics with respect to Education of the Father

Factor		Uneducated (1)	School Level (2)	College Level (3)	F-ratio	Sign. Level	Groups Differed
Academic Achievement in Mathematics	M	59.61	62.20	73.27	44.43	0.000	(1,3)&(2,3)
	S.D.	20.09	18.73	18.47			

From Table 3, it can be understood that Academic Achievement in Mathematics score was high (73.27) for the students whose Father's Educational level were up to College Level and the same was low (59.61) for those students whose fathers were Uneducated.

The F-ratios calculated for the scores on the Academic Achievement with respect to Father's Educational Qualification revealed that the students whose fathers were in different Educational level differed significantly in Academic Achievement at 0.01 level.

Further Analysis of differences between the individual groups tested through Tukey-HSD revealed that in Academic Achievement in Mathematics, the students whose Fathers Educational level

were up to College Level differed significantly from those of the students of the fathers who were Uneducated and educated up to School Level, were they had performed better than the students of Fathers who were Uneducated and educated up to School Level. The Other groups did not differ significantly among themselves.

Academic Achievement in Mathematics with respect to Mother's Educational Qualification

The Mean, Standard Deviation and F-ratios were calculated for Academic Achievement in Mathematics with respect to Mother's Educational Qualification and the same is presented in Table 4

Table 4 Summary of Results of Academic Achievement in Mathematics with respect to Education of the Mother

Factor		Uneducated (1)	School Level (2)	College Level (3)	F-ratio	Sign. Level	Groups Differed
Academic Achievement in Mathematics	M	60.39	61.90	73.98	50.15	0.000	(1,3)&(2,3)
	S.D.	19.63	18.71	18.34			

From Table 4, it can be understood that Academic Achievement in Mathematics score was high (73.98) for the students whose Mother's Educational level were up to College Level and the same was low (60.39) for those students whose mothers were Uneducated.

The F-ratios calculated for the scores on the Academic Achievement with respect to Mother's Educational Qualification revealed that the students whose mothers were in different Educational level differed significantly in Academic Achievement at 0.01 level.

Further Analysis of differences between the individual groups tested through Tukey-HSD revealed that in Academic Achievement in Mathematics, the students whose Mothers Educational level were up to College Level differed significantly from those of the students of the mothers who were Uneducated and educated up to School Level, were they had performed better than the students of Mothers who were Uneducated and educated up to School Level. The Other groups did not differ significantly among themselves.

Academic Achievement in Mathematics with respect to Father's Occupation

The Mean, Standard Deviation and F-ratios were calculated for the Academic Achievement in Mathematics with respect to Father's Occupation and the same is presented in Table 5.

Table 5 Summary of Results of Academic Achievement in Mathematics with respect to Occupation of the Father

Factor		Daily Wages (1)	Private (2)	Govt. (3)	Self-Employed (4)	F-ratio	Sign. Level	Groups Differed
Academic Achievement in Mathematics	M	56.71	70.49	72.32	68.26	40.440	0.000	(1,2),(1,3)&(1,4)
	S.D.	18.01	19.35	18.26	18.28			

From Table 5, it can be understood that the Academic Achievement in Mathematics Score was high

(72.32) for the students whose fathers were Government employed and the same was low (56.71) for the students whose fathers were Daily wages.

The F-ratios calculated for the scores on Academic Achievement in Mathematics score with respect to the students whose Father’s occupation revealed that the students whose fathers were in different Occupation differed significantly in Academic Achievement at 0.01 level.

Further Analysis of differences between the individual groups tested through Tukey-HSD revealed that in Academic Achievement in Mathematics, the students whose fathers were private employed differed significantly from those students whose fathers were daily wages, where they had performed better than the students whose fathers were daily wages. Further, the students whose fathers were Government employed differed significantly from those students whose fathers were Daily wages, where they had performed better than the students whose fathers were daily wages. Similarly, the students whose fathers were Self-employed differed significantly from those students whose fathers were Daily wages, where they had performed better than the students whose fathers were daily wages. The other groups did not differ significantly among themselves.

Academic Achievement in Mathematics with respect to the Mother’s Occupation

The Mean, Standard Deviation and F-ratios were calculated for the Academic Achievement in Mathematics with respect to the Mother’s Occupation and the same is presented in Table 6

Table 6 Summary of Results of Academic Achievement in Mathematics with respect to Occupation of the Mother

Factor		Home Maker (1)	Daily Wages (2)	Private (3)	Govt. (4)	Self-Employed (5)	F-ratio	Sign. Level	Groups Differed
Academic Achievement in Mathematics	M	65.87	53.21	71.49	70.95	62.59	12.550	0.000	(1,2),(1,3) (2,3),(2,4), (2,5),(3,5) & (4,5)
	S.D.	19.41	18.06	18.72	19.30	17.12			

From Table 6, it can be understood that Academic Achievement in Mathematics score was high (71.49) for the students whose Mothers were Private employed and the same was low (53.21) for the students whose Mothers were Daily Wages.

The F-ratios calculated for the scores on Academic Achievement in Mathematics with respect to the students whose Mother’s Occupation revealed that the students whose Mothers were in different Occupation differed significantly in Academic Achievement at 0.01 level.

Further Analysis of differences between the individual groups tested through Tukey-HSD revealed that in Academic Achievement in Mathematics, the students whose mothers were private employed differed significantly from those students whose mothers were home makers and daily wages, where they had performed better than the students whose mothers were home makers and daily wages.

Further, the students whose mothers were Government employed differed significantly from those students whose mothers were Daily wages and Self-employed, where they had performed better than the students whose fathers were Daily wages and Self-employed. Also, the students whose mothers

were Home Maker differed significantly from those students whose mothers were Daily wages, where they had performed better than the students whose fathers were daily wages. Likewise, the students whose mothers were Self-employed differed significantly from those students whose mothers were Daily wages, where they had performed better than the students whose mothers were daily wages. Similarly, the students whose mothers were private employed differed significantly from those students whose mothers were Self-employed, where they had performed better than the students whose mothers were Self-employed. The other groups did not differ significantly among themselves.

7. CONCLUSION

There exists a significant difference in Academic Achievement in Mathematics with respect to Education of the Father, Education of the Mother, Occupation of the Father and Occupation of the Mother. Based on the Results, it shows that Parents' Educational Level and their Occupation as Predictors of Academic Performance in Mathematics of Higher Secondary School Students.

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