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A Study on Socio-Economic Status of Secondary School Students in Relation to their Educational Aspiration in the Science Subject in Batticaloa District, Sri Lanka

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Abstract:

The socio-economic status of the family and their educational aspiration are important in determining effective and valid performance of their achievements in schools. The Objective of this study is to find out the correlation of Socio Economic Status (SES) and Educational Aspiration (EA) in secondary school students in urban and Semi-urban area in the Batticaloa district. Finding the correlation between these variables can assist educators in determining instructional strategies that best fit each individual student.

In this study was a design survey method was used and directed at the population of secondary students in the Batticaloa district of Eastern Province in Sri Lanka. Sixteen schools of 1AB, 1C, and Type 2 grades were selected from this research area. These schools were stratified into urban (7) and semi-urban (9) schools. 640 students who studied in grade 9 and 13 science and mathematics stream were selected at random. 40 samples was selected grade13 selected from each 1AB school, 30 samples in grade 9 were selected from all school. The average age of the students is 13.8 (early adolescent) and 17.9 (late adolescent). The research instruments, questionnaire format titled Student's Questionnaire; it's to measure the student's SES and with teacher responses about the student's attitude to their aspiration. Reliability was checked by test – retest after two weeks for the SES. The very high correlations obtained reveal the reliability of the instruments of measurement. Null hypotheses were postulated from specific objectives and tested at 0.05 level of significant to determine how the impact of socio-economic status correlates on students' achievement in science. The data was collected through questionnaire related to the variable. Qualitative and quantitative method (mixed method) was used to analysis. Statistical Package of Social Science (SPSS) which include Chi-Square test, t – test and Pearson Product Moment correlation coefficient was used in analyses.

Only when the SES of the parents is high, there is a significant relationship between this and students' EA. When the SES of the parents is low, there is no significant relationship between this and students' EA. Further when the sub-variables of SES is observed there is a significant relationship between FO, PE, and FI and students' AM, at the same time there is no relationship between FO, PE, and FI and the sub-variables of EA (SC and SAE). That is, EA of the children will not be satisfied the parents whose SES is low. At the same time, the EA of the children will be satisfied the parents whose SES is high, and there is a close relationship between FO, PE, and FI of the family and the AM of the children which is to be given by the parents. But there is no relationship between FO, PE, and FI of the family and SC and SAE.

Keywords: Socio-Economic Status(SES), Educational Aspiration(EA), Urban-Semi urban, Father Occupation(FO), Parental Education(PE), Family Income(FI), Academic Achievement Motivation(AM), Self Concept(SC), and Students Attitude to Education(SAE)

1. Introduction

It is generally thought that SES is related to how well a student does in the educational process. In this section, the relationship between SES and EAs is noted by three sets of researchers. While controlling the effects of intelligence, Sewell, Haller and Straus (1987) studied the relationship between EAs of high school students with family SES. Their findings showed that the relationship was statistically significant. Specifically, "high level EA or college plans are most characteristic of those from high status families" (Sewell, Haller and Straus, 1987). Weiner and Murray (1991) summarized findings of Weiner and Graves' (as cited in Weiner and Murray, 1993) study of a school system that was considered one of the nation's finest. Over half of the low SES students aspired for a college education compared to almost all of the students with a high SES. The trend continued with only one third of the lower SES students and all of the high SES students enrolled preparatory classes. Sewell and Shah (1998) noted that "an important and consistent finding in the area of stratification research is that the children of higher social-class origins are more likely to aspire to high educational and occupational goal than are the children of lower social class origins".

2. Literature Review

Slocima Walter (1986) found that more farm youth boys than nonfarm boys aspired to attend college. Though this is not consistent with earlier research on farm and nonfarm boys the differences may be due to the higher socio economic level of the sample of farm boys he studied. Slocima also found that the EAs and expectations tend to be positively related to the SES of parents. Sewell, Haller and Straus (1987) studied samples of rural farm, nonfarm and urban youth in wiscinsin. They measured the relationship between attitude towards a success college plans and occupational attainment among youth of high school age. When several factors such as intelligence, social class, educational level of father and like are controlled the different attributed to residence (urban and rural farm, and nonfarm) persist. They found that among the most talented sample of high school seniors, farm boys and girls have the lowest aspirations.

Thomas and Cosby (1985) studied aspirations of Appalachian rural youth in America. They were found to have significantly lower EAs than those who migrated to a residential area near an urban centre. There are some indications that rural students from the various ethnic minority groups have lowered occupational and EAs. Drabick Lawrence (1983) in his study of aspirations of Negro and white students of vocational agriculture in North Carolina found that negro male senior agricultural students did not desire or expect to enter occupations with great prestige as did white students. The relationship existed for the educational plans of the two groups. Dunkelberger and Sink (1985) found that American and Indian student had lower aspirations than other students. Rural Negro youth were found by Kulvelsky and Ohlendorf (1989) to be more oriented towards attaining higher levels of education than rural white youth.

Hansen and Haller (1981) surveyed Costa Rican youth and found that their aspirations were explained by family of origin. They had reports social class differences in Peruvian secondary school students "expectation of income". Hanson and Haller (1981) carried out a study of 928 fourth year gymnasium students and 1022 fifth year elementary students in four countries in Brazil. He found that SEs is more important than ability and performance in the formation of aspirations. In Sri Lanka there is a dearth of research in this field. The few surveys are carried out by University personal. Abeyratne (1966), Balapatabendi (1969), Alahakone (1977) do not indicate significant variation in social class aspirations for education. Alahakone (1977) point out that parents place a very high premium on education irrespective of SES. The other available evidence is from three surveys which provide some indication of the aspiration for jobs.

It is generally thought that SES is related to how well a student does in the educational process. In this section, the relationship between SES and EAs is noted by three sets of researchers. While controlling the effects of intelligence, Sewell, Haller and Straus (1987) studied the relationship between EAs of high school students with family SES. Their findings showed that the relationship was statistically significant. Specifically, "high level EAs or college plans are most characteristic of those from high status families" (Sewell, Haller and Straus, 1987). There were significant differences in aspiration according to SES (low and high levels) and SES importance sub variables (FO, PE, and FI) as the 'r' obtained was significant statistically in all EA sub variables (AM, SC and SAE). It was necessary to discriminate between an aspiration and expectation to identify both reliability and validity.

2.1. Main Objective

How far correlates between Socio-economic Status and Educational Aspiration in secondary school students in urban and Semi-urban area in the Batticaloa district.

2.2. Specific Objective

Explore the socio-economic status of secondary school students.

2.3. Hypothesis

 H_0 - There is no significant relationship between Socio-economic status of the parents and students' Educational Aspiration of science subject.

3. Methodology

In this study was a design survey method was used and directed at the population of secondary students in the Batticaloa district of Eastern Province in Sri Lanka. The above conceptualizations were taken into consideration when delimiting rural and urban difference. Rural and urban location was used as a sample dichotomy as the two were readily distinguishable and exclusive categories. It was decided to adopt the method used by the census and statistical department of Sri Lanka by using the criteria of local government authority to delimit rural and urban area. Municipal and urban council areas were chosen as urban areas and town council and Pradesa Saba areas were chosen as the rural areas. Rural areas has consist mostly primary schools. Thus, in this study the researcher had taken the sample schools which are closer to town areas which are called semi-urban school. To avoid a bias in the final sample, based on urban, semi-urban factor, the schools were first stratified as urban and semi-urban schools.

In order to choose school whose population is representative of the socio-economic structure it was decided to stratify the schools. A list of (1AB, 1C, and Type 2) schools in the five Zonal areas was obtained from Planning Division respective zonal office. There were 39 schools in the urban area and 147 schools in the semi-urban area. The under mentioned details were obtained about each school from the Planning division of the respective Zonal Education office. To choose an equal number of girls and boys in the urban area the girls' schools, boys' schools and mixed schools were listed separately under each category. In the semi-urban area almost all the schools were mixed.

A random sample of schools from each of these categories was chosen to obtain a representative sample of students of both sexes of both urban and semi-urban background, and also of the socio-economic structure. **16** schools were selected for the final sample, **07** schools were chosen from the urban area and **09** schools were chosen from the semi-urban areas. These schools were selected using stratified random sampling. From the urban and semi-urban areas the senior secondary and the junior secondary grades were included in the sample as the population under consideration consisted of grades 9 and 13 students. More schools had to be chosen from the semi-urban area because there were few students in grade 13 in the semi-urban area.

The total number of sample was taken by investigator was 640. But 04 students were rejected from sample size and who studied in grade 9 and 13 science and mathematics stream were selected at random. 40 samples was selected grade13 selected from each 1AB school, 30 samples in grade 9 were selected from all school. The average age of the students is 13.8 (early adolescent) and 17.9 (late adolescent). The research instruments, questionnaire format titled Student's Questionnaire; it's to measure the student's SES and with teacher responses about the student's attitude to the science subject. Grades gained of Academic Achievement (AA) at the final examination of grade 9 and 13 in zonal level. Reliability was checked by test – retest after two weeks for the SES. The very high correlations obtained reveal the reliability of the instruments of measurement.

Null hypotheses were postulated from specific objectives and tested at 0.05 level of significant to determine how the impact of socio-economic status correlates on students' achievement in science. The data was collected through questionnaire related to the variable. In addition the marks obtained by the students' of the final examination of grade 9 science subject and grade 13 biology/chemistry from record maintained at school level. Qualitative and quantitative method (mixed method) was used to analysis. Statistical Package of Social Science (SPSS) which include Chi-Square test, t – test and Pearson Product Moment correlation coefficient was used in analyses.

4. Data Analysis, Results and Discussion

This hypothesis test that the significant relationship between SES of the family and their EA. Here, EA has Achievement Motivation (AM), Self Concept (SC), and Students Attitude to Education (SAE) as Sub-Variables and the above each Sub-Variable is tested in 4 levels based on their scores. The SES is taken in two levels such as low (=<60) and high (60=<) with the three Sub-Variables of EA, Chi-Square test (Table 1) and "t" test (Table 2) test were done. Currie and Thomas (2006) said clearly that FO, PE, and FI give high values among the sub variables. The sub-variables, Father Occupation (FO), Parental Education (PE), Family Income (FI), Material Possession at home (MP), Accommodation in home (AH), Cultural Level of the home (CH), and Parental Attitude to Education (PAE), that decide the value of the SES. Based on this, table 3 shows the Chi-Square test done on these three Sub-Variables in two levels along with the four individual levels of AM, SC, and SAE of the Sub-Variables of Educational Aspiration.

The correlation of the two main variables (SES and EA) was analyzed in two ways as follows:

- a. Inter-Correlation between SES Class and EA Sub-Variables (Fig 1a,b,c,d,e,f)
- b. Inter-Correlation between SES Sub-Variable and EA sub-Variable (Table 4)

Table 1 shows the Chi-Square test done to check the relationship between the two levels SES (=< 60 and 61=<) and the four levels of the three Sub-Variables AM, SC, and SAE of EA. Here, there is a significant relationship (p=0.001) among the Sub-Variables AM, SC, and SAE in the each two levels of SES.

	Educational Aspiration																	
	AM Scores Range					SC Scores Range				Total		SAE Scores				Total		
SES					Total	р				_		р	Range					р
Class	1	2	3	4		_	1	2	3	4			1	2	3	4		
Low	1	21	80	35	137		0	5	63	69	137		2	53	80	2	137	
(=<60)																		
High	2	6	141	350	499		1	3	105	390	499		0	119	367	13	499	
(61 = <)						*0.001						*0.001						*0.001
Total	3	27	221	385	636		1	8	168	459	636		2	172	447	15	636	
* Signif	icant	at 0.	05 leve	el.				•			•	•						

Table 1: Cross tabulation (Chi-Square test) of Educational Aspiration Sub variables according to the SES class. p < 0.05

AM (44):1 :=< 11, 2:12=<& =< 22, 3:23=<& =< 33, 4:34 =< SC (35) : 1 :=< 09, 2:10=<& =< 18, 3:19=<& =< 27, 4:28 =< SAE (15):1 :=< 04, 2:05=<& =< 08, 3:09=<& =< 12, 4:13 =<

Inter-Relationship within Socio-economic status Class				•	't'' test	•			р							
	AM		p	SC		p	SAE		p							
	Mean	SD		Mean	SD		Mean	SD								
Low (=<60)	29.53	6.51	*0.001	27.56	4.25	*0.001	8.81	1.58	0.056							
High (61=<)	36.15	5.47		30.31	4.00		9.22	1.47								

Table 2: "t" test for difference in mean SES Class levels at EA Sub variables. (Significant at < 0.05 – two tailed test)

* Significant at 0.05 level.

Table 2 shows the "t" test done to check the relationship between the two levels of SES (=< 60 and >=61) and considering the mean and the SD of the Sub-Variables AM, SC, and SAE. Here mean and SD of two variables have been compared and the relationship between these two variables have been investigated. However, a slightly different result has been received. Though there is a significant relationship (p=0.001) between SES and the Sub-Variables AM and SC, it is noted that there is no significant relationship (p=0.056) between SES and the Sub-Variable SAE. It might be due to the slight variation in the mean value of the SES from the research samples. But, it can be assumed that while considering everything on the whole, there is a significant relationship between SES and EA Sub-Variables (SAE is slightly not significant, because p value is 0.056).

Socio- Economic Status – Sub Variables		AN	AM Scores Range Total p SC Scores Range Total p SAE Scores Range Total Range												p				
		1	2	3	4			1	2	3	4			1	2	3	4		
	=<5	0	26	197	279	502		1	6	139	356	502		2	138	349	13	502	
FO(10)	6=<	0	1	25	108	134		0	2	29	103	134		0	34	98	2	134	
	Total	0	27	222	387	636	*0.001	1	8	168	459	636	0.508	2	172	447	15	636	0.695
	=<5	0	26	197	279	502		1	6	139	356	502		2	138	349	13	502	
PE(10)	6=<	0	1	25	108	134		0	2	29	103	134		0	34	98	2	134	
	Total	0	27	222	387	636	*0.001	1	8	168	459	636	0.508	2	172	447	15	636	0.695
	=<5	0	17	127	160	304		1	5	98	200	304		2	92	203	7	304	
FI(10)	6=<	0	10	95	227	332		0	3	70	259	332		0	80	244	8	332	
	Total	0	27	222	387	636	*0.001	1	8	168	459	636	0.068	2	172	447	15	636	0.142

Table 3: Cross tabulation (Chi-Square test) of Educational Aspiration according to the SES Sub variables. p< 0.05

* Significant at 0.05 level.

AM (**44**): **1**: =< 11, **2**: 12=<& =< 22, **3**: 23=<& =< 33, **4**: 34 =< **SC** (**35**): **1**: =< 09, **2**: 10=<& =< 18, **3**: 19=<& =< 27, **4**: 28 =< **SAE** (**15**): **1**: =< 04, **2**: 05=<& =< 08, **3**: 09=<& =< 12, **4**: 13 =<

Table 3 shows the Chi-Square test done to check the relationship between the two levels (=<5 and 6=<) of the three Sub-Variables (FO, PE, and FI) that decide SES and the four levels of the Sub-Variables (AM, SC, and SAE) that decide EA. From this, there is a significant relationship between FO, PE, and FI and AM (p=0.001) and there is no significant relationship between FO, PE, and FI and students SC (p=0.508, 0.508, and 0.068 respectively). Likewise, there is no significant relationship between FO, PE, and FI and SAE (p=0.695, 0.695, and 0.142 respectively).

To decide whether to accept or not the hypothesis, Inter-Correlation test had been done finally between these two variables. This was done in two ways. Figure 1, shows the scattered diagram of the test done to see the relationship between SES class and the Sub-Variables AM, SC, and SAE. Table 4, shows the Inter-Correlation test to check the relationship between the three Sub-Variables of SES and the three Sub-Variables of EA. Here, figures 1a, 1b, and 1c show that there is no significant relationship between low SES and AM, SC, and SAE (the values of p are 0.255, 0.133, and 0.836 respectively). A minimum correlation is seen between low SES and AM, SC, and SAE (r = 0.102, 0.134, and 0.019 respectively) and this is not a significant relationship. By this, the percentage of the non-determination factors (residual) is high in the correlation between low SES and the Sub-Variables of EA. That is, the non-determination factors (residual) between low SES and AM is 99% ($R^2=0.010$), between low SES and SC is 99% ($R^2=0.018$), and between low SES and SAE is 100% ($R^2=0.000$). Therefore, we arrive at a conclusion that there is no significant relationship between low SES and AM, SC, and SAE.

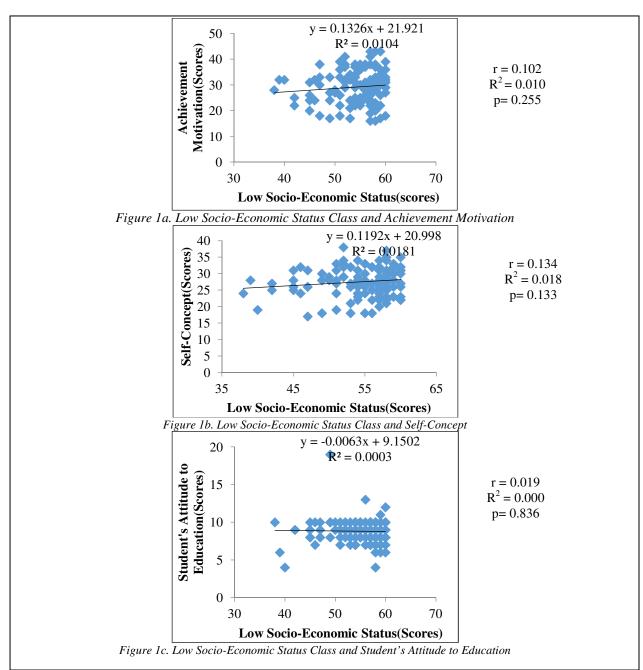
When considering the low SES of the family condition, father's occupational prestige lay on class V, VI, and VII. Therefore, their occupational status is in very low level. Parental attainment level is also in level II and III, hence, they are very low in the educational level. Due to this, their family income is also in level VI and V. Thus, the students belong to these families fluctuate themselves in deciding their educational aspiration. The following can be reasoned for the above situations;

- a. Parents do not have mentality to stimulate their children's achievement motivation.
- b. Learning motivation is generally very low in their home environment.
- c. Even some parents motivate their children, due to poverty that becomes inefficient.
- d. The objectives of self-concept among the students are very low.
- e. The family setup also does not allow the students to develop their self-concept.
- f. Since students have other essential needs than education, students' attitude to education is very low in their home environment.

Therefore, there is no significant relationship between low SES and AM, SC, and SAE. But an opposite result is obtained, that is, there is a significant relationship between high SES and the sub-Variables AM, SC, and SAE. The Scattered diagram (fig 1d, 1e, and 1f) shows the above result (the value of p is 0.001 in all three stages). The correlation between high SES and the three Sub-Variables

AM, SC, and SAE are 0.413, 0.269, and 0.206 respectively, and this relationship is significant. At the same time, though the non-determination factors (residual) between high SES and AM is 83% (R^2 =0.171), between high SES and SC is 93% (R^2 =0.072), and between high SES and SAE is 96% (R^2 =0.042), the relationship is significant, but the percentage of the non-deciding factors (residual) are very high. There are many reasons for this such as; while considering the high SES family condition, their general father's occupational prestige lie on class I, II, and III and their occupational status is in very high level; parental attainment level is also mostly in level I, hence, they are very high in the educational level. Due to this, their family income level becomes in I, II, and III. Thus, the parents have more influence on their children's education, students educational aspiration can also be seen in different ways. To have significant relationship between high SES and EA, many reasons can be given as follows;

- a. Since the occupational prestige of the parents is high, they are able to give good achievement motivation considering their children's superior future carrier.
- b. Parents' likeliness also lies on their children's self-concept.
- c. Since the educational attainment level of the parents is high and that give the children a good impression which motivates them. Therefore students' attitude to education is stimulated.
- d. Since the educational attainment level of the parents is high, the children place themselves in their parents' stage; hence possibilities arise for their self-concept becomes firm.
- e. Since family income of these parents is also high, economic obstacles in the children's education will not arise. Therefore the students' attitude to education will be efficient.



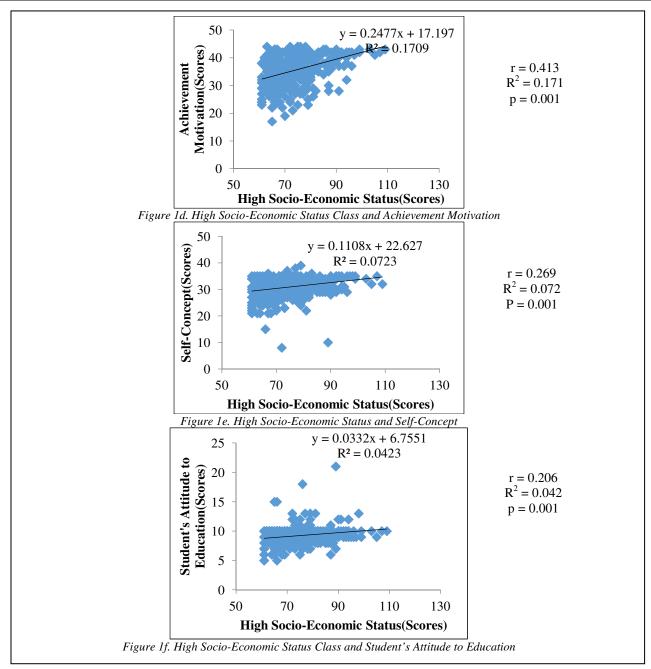


Figure 1: Inter-Correlation between SES class and EA Sub variables. p < 0.05, r = Co-efficient of Correlation, $R^2 = C$ oefficient of Determination

SES Sub-variables			Corr			Coefficient Matrix(r) on Aspiration											
		AM			SC			SAE									
	r	\mathbb{R}^2	р	r	\mathbb{R}^2	Significant	r	\mathbb{R}^2	р								
						< 0.05											
FO	0.242	0.058	*0.001	0.081	0.007	0.062	0.006	0.000	0.879								
PE	0.279	0.078	*0.001	0.131	0.017	0.059	0.062	0.004	0.117								
FI	0.215	0.046	*0.001	0.137	0.019	0.057	0.083	0.007	0.087								

Table 4: Inter-Correlation between SES Sub variables and EA Sub variables. p < 0.05, r = Co-efficient of Correlation, $R^2 = C$ oefficient of Determination. * Significant at 0.05 level

Table 4, shows the results of the inter-correlation test done to check the relation between the important Sub-Variables FO, PE, and FI of SES and the Sub-Variables AM, SC, and SAE of EA. Here, considering the correlation between the low and high level of SES and

EA on one side and the Sub-Variables of SES and EA on the other, there's a slight difference is seen. That is, there is a significant relationship between FO, PE, and FI and AM, but there is no significant relationship between FO, PE, and FI and SC and the same Sub-Variables FO, PE, and FI with SAE. The correlation between FO, PE, and FI and AM, SC are 0.242, 0.279, and 0.215 respectively, and at the same time, the non-determination factors (residual) between the above is 94.2% (R^2 =0.058), 91.2% (R^2 =0.78), and 95.4% (R^2 =0.046). Likewise, many non-deciding correlation external factors can be mentioned in the educational system. In particular,

- a. Students' non-interest towards science subjects.
- b. The learning activities of science subject in the classrooms are not attractive.
- c. The science subject teacher-student relationship is not satisfactory.
- d. Lack of equipment in the science laboratory.
- e. Schools do not organize additional activities in science subjects (e.g. recapping, reinforcement, and non-conducting missing practical).
- f. Not introducing new teaching methods in science subjects.
- g. There are no competitions among the students to attain achievement level.

It is obvious that both the parents and the teachers can give achievement motivation to the children and this will increase their achievement of science subject. For this, the contribution of FO, PE, and FI is very low (based on the correlation between the above two variables), and at the same time from the result of the R^2 , the non-determination factors contribute for the achievement motivation. Further to the above mentioned non determination factors such as teacher, environment, and management can be mentioned.

Table 4, shows that there is no significant relationship between FO, PE, and FI of SES and SC and SAE of EA. That is, the value of p between FO, PE and FI of SES and SC is 0.062, 0.059, and 0.057 respectively, and between FO, PE and FI of SES and SAE is 0.879, 0.117, and 0.087 respectively. This shows that there is no relationship between the above two variables. Therefore, the hypothesis cannot be acceptable fully.

Hence, the results to test the hypothesis; Chi-Square test, "t" test, and Inter-Correlation test, the hypothesis can be formed as follows:

- a. There is no significant relationship between low SES and EA sub-variables.
- b. There is a significant relationship between high SES and EA sub-variables.
- c. There is a significant relationship between SES sub-variables and AM.
- d. There is no significant relationship between SES sub-variables and SC and SAE.

5. Conclusion

Only when the SES of the parents is high, there is a significant relationship between this and students' EA. When the SES of the parents is low, there is no significant relationship between this and students' EA. Further when the sub-variables of SES is observed there is a significant relationship between FO, PE, and FI and students' AM, at the same time there is no relationship between FO, PE, and FI and the sub-variables of EA (SC and SAE). That is,

- a. The EA of the children will not be satisfied the parents whose SES is low. At the same time, the EA of the children will be satisfied the parents whose SES is high, and
- b. There is a close relationship between FO, PE, and FI of the family and the AM of the children which is to be given by the parents. But there is no relationship between FO, PE, and FI of the family and SC and SAE.

It can be observed here is that there is a different relationship between SES of the family and EA of the children. When there is a high SES, a significant relationship is observed with EA. Therefore, it is important to uplift the SES of the families in many different ways. Only though this, EA of these children can be achieved. This is a new finding which was not been discovered earlier. Whilst investigating the relationships among sub-variables FO, PE, and FI of SES and the sub-variables AM, SC, and SAE of EA, it was observed that FO, PE, and FI are directly linked with AM. If FO is very high, the educational attainment level of the parents are high, and the income of the families are high; it can be concluded that AM of the children can be given to the children by the parents better ways through these. It is a fact that the achievement of science subject of the children can be raised through this. It is also observed that this is a new finding as well was not been discovered earlier. Therefore, it will become a must for the parents and their family members to raise the performance of their children. For this, the standard of FO, PE, and FI of the families must be high for providing appropriate AM to their children.

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