academicresearchJournals

Vol. 3(7), pp. 178-196, August 2015
DOI: 10.14662/IJARER2015.039

ISSN: 2360-7866
http://www.academicresearchjournals.org/IJARER/Index.htm

International Journal of Academic Research in Education and Review

Full Length Research

Gender Difference on Factors Affecting Academic Achievement: The Case of General Secondary School Students of Aksum Town

[1]Alemat Abay, [2]Araya Mebrahtu, [3]Syum Adamu and [4]Ybrah Hagos

[1]Aksum University, P.O. Box 1010. Email: alemat_abay@yahoo.com
[2]Adigrat University, P.O. Box 1001. Email: araya_mab@yahoo.com/arayamebrahtu@gmail.com
[3]Tana Communications PLC, Phone number +251 0911 853046. Email: syebrie@yahoo.com
[4]Adigrat University, Phone number +251 0913 139174. Email: yibhag@gmail.com

Accepted 4 August 2015

Since the implementation of the New Education and Training Policy (1994) of Ethiopia, among various strategies, affirmative action is being implemented to increase females' academic performance and minimize their attrition rates on the underlying assumption that differences are attributed to socially constructed factors. But, regardless of the presences of various contrasting research findings, in the context where the study was conducted, research based findings concerning the factors contributing to gender difference in academic performance were lacking. Hence, the main objective of this study was to analyze gender difference in relation to factors (academic self-concept, study habit, and SES) that affect academic achievement of students. To this effect, survey (an ex-post facto) design was used, in the sense that the researchers do not have direct control over the independent variables. To maintain gender balance of the sample subjects, stratified random sampling followed by simple random sampling technique was employed. A self-report Likert scale questionnaire and structured interview schedule were used. The computed alpha reliability coefficient for the scales: academic self-concept and study habit were .80 and .83, respectively. Analysis was made on the data obtained from a sample size of 350 students (186 female and 164 male) drown from the target population of 5235 students and percentage, chi-square, t-test, and ANOVA were the statistical techniques used. Consequently, most students were found to have been experiencing poor study habit, low academic self-concept, and low academic achievement. No significant gender difference was observed in academic self-concept, study habit, math and science performance. The variables: study habit, academic self-concept, and perceived level of poverty were found to have significant main effects on academic achievement. Hence, the study has implied the need to shift from emphasis on gender difference to the provision of intervention mechanisms to both male and female students so as to maximize the students' imperative experience of the factors affecting academic achievement.

Key words: Academic achievement, Academic self-concept, Gender difference, SES, study habit.

Cite This Article As: Abay A, Mebrahtu A, Adamu S, Hagos Y (2015). Gender Difference on Factors Affecting Academic Achievement: The Case of General Secondary School Students of Aksum Town. Inter. J. Acad. Res. Educ. Rev. 3(7): 179-196.

INTRODUCTION

Background

Now days, the world is becoming more and more competitive and, for that matter, quality of performance has become the key factor for personal and institutional progress. Parents desire that their children climb the ladder of performance to the highest possible level which puts a lot of pressure on students, teachers, schools, and in general the education system itself. In fact, it appears as if the whole system of education revolves round the academic achievement of students though various other outcomes are also expected from the system. Thus, a lot of time and effort of the schools are used for helping students to achieve better in their scholastic endeavors. The importance of scholastic and academic achievement has raised important questions for educational researchers such as, what factors promote students' achievement? What factors contribute to individual differences in academic achievement? How far do the different factors contribute towards academic achievement? And the like (Ramaswamy, R., 1990).

Various research findings revealed that School achievement could be affected by various factors like intelligence, study habits, the students' attitudes towards school, the students' belief and perception of themselves, their personality aspects, socio economic status, etc. Moreover, as indicated by Dweck, C. S. (1999), the desire of success is derived from individual's concept of him/her self and in terms of the meaning of various incentives as they spell success and failure in the eye of others

Study habit, which is influenced by attitudes, personality traits, levels of aspirations, teaching methods adopted, and material they are to learn, play a very important role in the life of students. Success or failure of each student depends upon his/her own study habits and poor study habits often result in poor academic performance even among the naturally bright students (Verma, B.P., 1996). A study conducted by Zarb, J.M. (1981) indicated that academic self-concept and study habits were significant predictors of academic performance for both males and females. The result suggested that the best students in a "normal" population are not necessarily those with a high non- academic self-concept but those who have developed good study habits and realistically perceive themselves as academically successful, that is, with high academic self-concept. Academic *self-concept, which is* shaped through experiences and interpretations of the surrounding environment and is influenced by evaluations of significant others, reinforcements and attributions of one's own behavior, refers to individuals' knowledge and perceptions about themselves in academic achievement situations (Wigfield & Karpathian, 1991). Academic-self-concept indicates one's self-perceived *ability* within a given academic area (Bong and Skaalvik, 2003).

In addition, different researchers have consistently found that households' socioeconomic background is an important explanatory variable for educational outcomes. For example, Sirin, S. R. (2005) has reviewed empirical journal articles on socioeconomic status and achievement published between 1990 and 2000 and founds that the parents' socioeconomic status had a strong impact on students' academic achievement. Empirical investigations most frequently assess SES using measures of three key variables: family income or consumption, parents' education level, and parents' occupations (Bradley & Corwyn, 2002). Family income is an indicator of the financial resources available to a family whereas parental education levels and occupations are indicators of the parents' intellectual resources and social status, or human and social capital (Bradley & Corwyn, 2002; Conger & Donnellan, 2007).

Of the studies conducted so far, contrasting results were reached concerning gender in relation to the factors and achievements in science and mathematics. To mention some, compared to their male counterparts, females achieve lower in math and science performance and report "low" in academic self-concept (Marsh, Köller, and Baumert, 2001). On the contrary, a study conducted by Dana Wood (2005) indicated no gender difference in academic self-concepts and math/science. In the Ethiopian case, even though the education of women (mainly in participation) is increasing from time to time, National studies (e.g., NOE, 2000, 2004) reported that females' academic achievement is significantly lower than males in primary and secondary schools. Analysis of the data in this study revealed that the difference between males and females gets wider as we go up the ladder of education in public and government schools.

The Current Ethiopian education and training policy envisages bringing-up citizens endowed with human outlook, countrywide responsibility and democratic values having developed the necessary productive, creative and appreciative capacity in order to participate fruitfully in the overall development agendas of the nation (ETP, MoE, 1994). The achievement of these objectives seems to be relied on the provision of students with opportunities to produce relatively permanent change and mould their personality. The primary purpose of teaching, which is only one of the institutional influences in a person's education, is to assist the individual to develop his or her full potential as well as to develop the knowledge, attitudes and skills to interact with the environment in a successful manner (Nayak and Rao, 2004).

In the effort to improve students' cognition and affective outcomes in school learning, educational psychologists and educators have continued to search for variables

(personal and environmental) that could be manipulated in favor of academic gains. Among the variables that have attracted researchers in the area of educational achievement includes: academic self-concept, study habit, and socio-economic status (Wangoo, and Khan, 1991). Therefore, taking the advantages of these all, the study was conducted in Axum Town, Ethiopia. This was done mainly on the one hand the researchers' familiarity with the area and its educational realities and on the other hand, the schools in the town, as any other educational institutions of the country, were striving to ensure quality of education at all levels in a condition where research based inputs regarding the aforementioned variables which are necessary for providing and maintaining quality of education are lacking. Hence, it was the researchers' strong belief to work on the variables: Academic self-concept, study habit, socio-economic status, and academic achievement of students across gender with the intention of improving the quality of the teaching-learning process and its outcome by establishing convenient learning environment.

STATEMENT OF THE PROBLEM

Gender issue has become the talk of today's forum. It is also becoming common, and of course quite interesting, to observe that girls are securing better ranks than boys in some competitive examinations. Earlier, some researchers reported that intelligence was the only factor that causes gender variations among high achievers (Robinson, W. P. 1965). Later, some attributed familial factors like parental aspiration, beliefs, and their socio economic status as the main factors that cause gender differences among high achievers (Malathi, W. P. 1987). However, this trend seems to be changing in the recent past and such discriminations are not so marked. In this sense, education is one of the social sectors in which the Ethiopian government is working hard to ensure gender equality. Affirmative action is one of the strategies duly being implemented to increase females' academic performance on the underlying assumption that differences are attributed to socially constructed factors. Nevertheless, in the specific context that this study was conducted, research findings revealing factors that contribute for significant gender difference in academic achievement were lacking.

In the contemporary Ethiopia, It has become mandatory for the education system to manifest overall improvement in sciences, mathematics, engineering, and technology, which calls for a continued expansion and equitable access to high-quality general education with promising foundations in science and mathematics and special efforts to improve the science literacy level of the population (ESDP IV, MoE, 2010). Understanding this reality, though the main purpose of this study was to find out gender differences on the factors affecting academic achievement, the researchers decided to focus on the achievements of students in science and mathematics only.

Moreover, currently, the MoE is shifting its attention to quality concerns in general and to those inputs and processes which translate more directly into improved student learning and help change the school into a genuine learning environment. These include quality-focused school supervision, internal school leadership, increased student participation, and school-community partnerships. However, despite the investment made in quality inputs like teachers, buildings, books, and related infrastructures, a deteriorating trend of students' achievement was identified as one challenge in the implementation of the fourth education sector development program (*Ibid*). This obviously implied the need to look at the students' condition in some psychological, pedagogical, and social factors that are well studied and believed to explain students' academic achievement. But, unfortunately, research-based evidence on these factors in the area where the present research was conducted were lacking. Fortunately, the researchers were knowledgeable about the claims frequently raised by parents and teacher that quality of education is deteriorating irrespective to the educational provisions compared to earlier one. This reality gave the researchers a momentum to conduct the study in the area by focusing on relevant variables.

Hence, to maximize the effectiveness of quality enhancing endeavors that had been made by the government in general, supplementing the endeavors with the provision of research based information concerning the learners' academic self-concept, study habit, and the households' socio economic status was mandatory. That was so since the result was believed to be fundamental inputs for the development and introduction of appropriate intervention mechanisms to scale up the participation and performance of students. To this end, analyzing gender difference in relation to factors affecting academic achievement of students was the main intention of this research.

OBJECTIVES

Keeping in view the importance of studying academic self-concept, study habit, socio economic status, and academic achievement across gender, the following objectives were forwarded to be investigated.

- ✓ To identify the students' status on study habit, academic self-concept, socio economic status, and academic achievement
- ✓ To examine the students' level of study

habits, academic self-concept, socio economic status, and academic achievement across gender

- ✓ To determine the relationship among the students' academic self-concept, study habit, socio economic status, and academic achievement
- ✓ To explore the influence of study habits, academic self-concept, and socioeconomic status on the academic achievement of students across gender

SIGNIFICANCE OF THE STUDY

The result of this study was expected to have the following importance.

- ✓ Provides research based information concerning the students' status on study habit, academic self-concept, socioeconomic status, and academic achievement across gender; and the influence of the students' academic self-concept, study habit, socio economic status on their academic achievement. This would in turn help concerned bodies (eg. School principals) to develop and conduct intervention mechanisms so as to enhance and support the development of appropriate academic self-concept and study habits among the students and thereby enhance their academic achievement.
- ✓ Fill the demand for having research findings in the specific context concerning the issue at hand. Therefore, the result could supplement the quality enhancing endeavors being made in the specific areas by providing valuable psychological and pedagogical realities experienced by the students.
- ✓ To set a base for AKU and other concerned agencies to provide community service trainings focusing on enhancing students positive academic self-concept, study skills, and perception in the household' living standards.
- ✓ Can serve as stepping stone for further similar research works in the area

Delimitation of the Study

This study was delimited to general secondary school (grade 9 & 10) students of Axum town, which is found in the central zone of Tigray region. This was done so as to dig the problem in-depth and make the study manageable. Due to the current emphasis of the government on science and mathematics, only students' achievement in science and mathematics was given priority to be treated in relation to the variables: Academic self-concept, study habit, socio economic status of the students.

Operational Definition

- **Study Habits** refers to the student's measure on overall activities that he/she had been experiencing in learning the subject matters as measured by the study habit inventory scale.
- **Academic Self-Concept-** refers to the student's measure of his/her understanding and feeling about own academic capability as measured by academic self-concept scale.
- **Academic achievement-** the average score of students on mathematics and sciences (Biology, Physics, and Chemistry) courses in teacher made or classroom tests and exams of two consecutive semesters

RESEARCH METHODS

RESEARCH DESIGN

A survey descriptive (an ex-post facto) design was employed in the sense that the researchers do not have direct control over the independent variables due to the fact that either their manifestations have already occurred or they are inherently not manipulable. Moreover, since a relatively large sample size was taken, survey design was found to be appropriate.

TARGET POPULATION AND SAMPLE SIZE

The target population of the present study was all government general secondary schools (grade 9 & 10) students of Axum town, which accounted for 5235 students. Out of the total population, 360 students were taken to be subjects of the sample intending that the result obtained from such amount of sample size would be generalized to the population which the sample were drawn from.

SAMPLING TECHNIQUES AND SELECTION PROCEDURE

Proportionate stratified random sampling, based on gender, so as to maintain the balance between male and

female participant was employed to select sample subjects. To ensure the collection of a range of information, consideration was made to maintain the balance in the distribution of the sample members drawn from each school. Finally, 194 female and 168 male students were selected from each stratus using systematic random sampling[1].

DATA GATHERING INSTRUMENTS

To gather the students' self-perceived personal enablers of academic success, academic self-concept scale developed by Reynolds (1988), which is a 40-item self-report measure, was adopted with slight modification. The academic self-concept scale used in the present study was consisted of 40 statements, in which 23 positive and 17 negative statements, which had to be checked on five-point scale. According to the scale, the respondents were grouped into three categories as "low", "medium", and "high" with respect to the score range of "40 – 156", "157 – 170", and "171 – 200", respectively. Alpha coefficient, for the academic self-concept construct was found to be 0.80., which is recommendable to be used.

In a similar manner, data regarding the participants' study habit experiences, were gathered through the study habit inventory used by Nuthanap, G. (2007), which was the modification of the original study habit inventory of Patel, B. V. (1976), and these inventory statements, with slight and necessary amendment, were used in the present study. Thus, the present study habit Scale consisted of 40 statements of which 26 positive and 14 negative statements that had to be checked on 5-point scale. According to the scale, the respondents were grouped into three categories as "poor", "medium", and "good" representing the score ranges of "40 – 144", "145 – 165", and "166 – 200", respectively. The reliability, alpha coefficient, of the construct was computed to be 0.83., which is recommendable to be used.

To collect data on the students' socio economic status, an interview schedule, as indicated in the appendix section of this paper, was used. Finally, Secondary data: the participants' average scores in mathematics and science of two consecutive Semesters was taken from the students' record office. To minimize communication barrier, items of each construct were translated in to Tigrigna, mother tongue language of the participants.

DATA GATHERING PROCEDURE

In collecting the data, permission from the part of the school principals and consent among the participants was maintained. Then after, three teachers selected from the respective schools conducted the administration of the questionnaire. By clearly communicating the purpose of the study and not demanding to write their name, an attempt was made to make participants be sure that their answers were confidential and only be used for the research purpose by the researcher. Student's academic achievement was taken from the record office of the school. Finally, out of the total 360 questionnaires distributed, 350 questionnaires were found to be appropriately filled and prepared for analysis.

DATA ANALYSIS TECHNIQUES

To analyze the data gathered the following statistical techniques were used with the help of SPSS. Specifically, frequency, percentage, and graphs were used to represent the students' demographic characteristics, and their status in academic self-concept, study habit, socio-economic status, and academic achievement. To investigate gender differences in academic self-concept, study habit, socio-economic status, and academic achievement, and again identify association of academic achievement with academic self-concept, study habit, and the dimensions of SES, Pearson Chi—square test was used. T-test was also used to determine gender based mean difference in study habit, academic self-concept, and academic achievement. Pearson correlation coefficient was used to identify the relationship between academic self-concept and study habit, academic achievement and academic self-concept, study habit and academic achievement. To analyze the economic status of the respondents, Poverty analysis technique was employed. The incidence of poverty was analyzed using, the expenditure approach[2] , the one developed by Foster, Greer, and Thorbecke (1984) known as FGT Index, which is commonly applied for poverty analysis (Fredu, 2008). Finally, to identify the influence of academic self-concept, study habits, and socio economic status on the students' academic achievement, ANOVA was computed.

[1] Based up on the number of students(male and female), Aksum SC 73 female & 65 male, Kedamawi minilik 37 female & 39 male and kaleb 84 female & 64 male

[2] The rationale for adopting the Expenditure approach to analyze the poverty is due to the fact that consumption is believed to vary more smoothly than income , It is based on long term perspectives not on short term ways and consumption is more readily observed ,recalled and measured than income and people hesitate to expiating their income(WBI,2005).

DATA ANALYSIS: RESULT AND DISCUSSION

Once again, as indicated in the introductory part of this paper, the main purpose of this study was to examine gender difference on the predetermined factors (Academic self-concept, study habit, and SES) affecting mathematics and science achievement of general secondary school students at Axum town. Accordingly, this section deals with the statistical presentation and discussion of the results obtained.

DEMOGRAPHIC CHARACTERISTICS

The demographic characteristics of the sample subjects with respect to school they attend, grade level, and age are presented in the table 1. As it can be referred from this table 1, the age of the participants ranges from 15 – 18 years. Out of the total number of the sample, 62.28 percent belongs to the age category 15 & 16, which constitutes 50 percent male and the remaining 50 percent female students. The rest 51.72 percent of the participants were also in the age category of 17 & 18 years of which 58.33 percent were female students and male students constituting the remaining percent, 41.67%. As it is shown in this same table 1, majority (56.7%) of the participants were from grade 9, which in turn consists of 50.5 percent male and 49.5 percent female students. It was also observed that 57.89 percent of grade10 participants were female and the rest 42.11percent were male students. Participants from grade 10 had a total share of 43.3 percent. Similarly, as indicated in this table 1, Kaleb secondary school takes the highest (40.6%) share of the participants and the remaining (59.4%) goes to the other two schools.

THE STUDENTS' STUDY HABIT

The efficient and effective way of learning depends upon the study habits of the students for it enables to elicit and guide one's cognitive processes during learning. Study habits refer to the sum total of activities carried out by learners during the learning process. Relying in this sense, this study has attempt to frame the manifestations of this important pedagogical construct with respect to: home environment & planning of work, reading & note taking habits, planning of subjects, habits of concentration, preparation for examination, general habits & attitudes, and school environment. Accordingly, the explanations presented under this section in one or the other way focuses on these dimensions.

STUDENTS' STATUS ON STUDY HABIT ACROSS GENDER

Table 2 shows that, within the same sex, the distribution of both male and female participants follow similar trend across the scale; that is, most (55.4%) of female participants relegate to the lower (poor) category of the scale and tend to decrease its share to 10.8 percent when goes to the upper (good) category of the scale. As depicted in same table 2, the same was true for the distribution of male students in the study habit scale, i.e., most (60.4%) of them were found to belonging to the lower (poor) level and the least (7.9 %) goes the upper (good) level of the scale. Generally speaking, majority of both male and female students were found to have below average or unfavorable study habit experiences.

As displayed in table 2, comparatively speaking, the distribution of students across the different levels of the study habit scale was observed to be more imperative for female students since they took 60.6% share of the upper (good) level in the scale while male students took the remaining 39.4 percent of the same level. On the contrary, male participants were found to take higher share in the lower (poor) level of the study habit scale. Regardless of these all-apparent variations observed between male and female students in the study habit scale, the test of significance for the association between gender and study habit was found non- significant. In other words, the tendency of the student to have typical experience of study habit at any level in scale was independent of being male or female. Thus, the variations observed can only be attributed to chance factor. Statistically, the Pearson Chi-square test was not significant (X^2 (2, N = 350) = 1.24, p = 0.538, 2-tailed). Moreover, in addition to the levels of study habit scale, an attempt was made to investigate gender difference in the students' overall study habit. Accordingly, as indicated in table 6, the level of study habit being experienced by the students was independent of their gender. That is, the computed statistical result was not statistically significant (t = .181, df =348, p = .857, 2-tailed). This may happen due to equal opportunities given to both male and female students by parents and existence of social environment that sets equal favor to both sexes; and for that matter show similar effort in education.

This finding goes in line with the findings of Stella and Purushothaman (1993), Sampath and Selvarajgnanaguru (1997), and contradicts with the results obtained by Panda (1992) (which revealed males' better experiencing in study habit), and Sud and Sujata (2006) (supporting better study habit of female students). Figure 1

STATUS OF MALE AND FEMALE STUDENTS ON STUDY HABIT COMPONENTS

As depicted in table 3, it was observed that both male and female students were found to experience similar practices in all study habit dimensions. As a whole, except for the dimensions: 'School environment,' and

Table 1: Distributions of the participants across their sex, Schools, and Grade Level

Characteristic	Category	Male		Female		Total	
		N	%	N	%	N	%
School	Axum secondary	64	47.4	71	52.6	135	38.6
	Kaleb secondary	62	43.7	80	56.3	142	40.6
	Kedamawi menilic secondary	38	52.1	35	47.9	73	20.8
	Total	164	46.86	186	53.14	350	100
Grade level	9^{th}	100	50.5	98	49.5	198	56.7
	10^{th}	64	42.11	88	57.89	152	43.3
Age	15 & 16	109	50	109	50	218	62.28
	17 & 18	55	41.67	77	58.33	132	51.72

Table 2: Distribution and Comparison of Male and Female students on Study Habit scale (N = 350)

			Study Habit Levels			Total	
			Good	Average	Poor		X^2
Sex of the student	Female	Frequency	20	63	103	186	
		% within sex	10.8	33.9	55.4	100	
		% within the total students	60.6	54.8	51.0	53.1	1.24 NS
	Male	Frequency	13	52	99	164	
		% within sex	7.9	31.7	60.4	100	
		% within the total students	39.4	45.2	49.0	46.9	
Row total in percentage			9.4%	32.9%	57.7%	100.0%	

NS – not significant

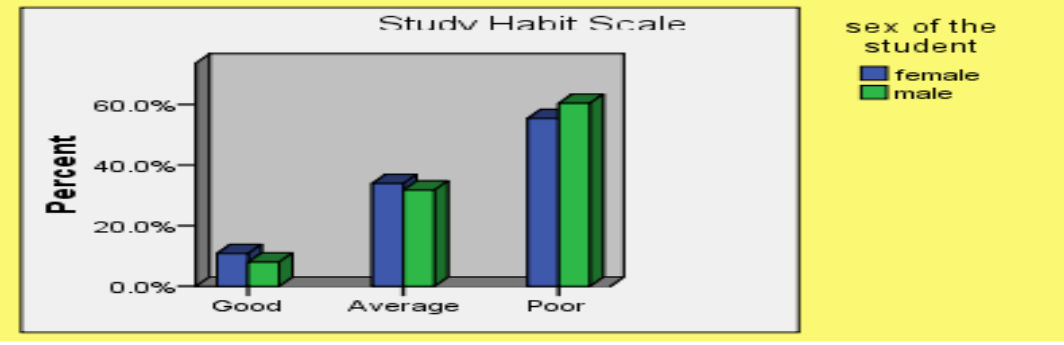


Figure 1. Status of male and female students on study habit scale

'General habits and attitudes', female students were seen to experience slightly better practice in all the remaining study habit components. However, the observed mean differences between male and female students in all the study habit dimensions were not statistically significant. As a result, the difference observed cannot be attributed to the variable gender. So, as per this finding, the study habit experiences that both male and female students held within each dimensions of study habit are independent of their gender. For more details, please visit Table 3. This might happened due to the availability of some favorable conditions such as affirmative action which may make female students conceive relatively good aspiration of academics. In addition, since they are

Table 3: Independent-sample t-test between male and female students on study habit components (N = 350)

Study habit Components	Males(N=164)		Females(N=186)		't' value	Sig. 2-tailed	**df**
	Mean	SD	Mean	SD			
Home environment and planning of work	23.11	4.107	23.56	4.514	.969	.333	*348*
Reading and note taking	23.12	6.116	23.14	4.204	.032	.974	
Planning of subjects	20.79	2.791	21.34	6.224	1.047	.296	
Habits of concentration	14.06	3.061	14.48	3.387	1.219	.224	
Preparation for examination	20.43	3.639	21.03	3.484	1.589	.113	
General habits and attitudes	21.90	3.531	21.84	3.645	-.152	.880	
School environment	21.52	4.201	21.25	4.641	-.583	.561	

Table 4: Distribution and Comparison of Male and Female Students on Academic Self-concept scale (N = 350)

			Self-concept Levels			Total	X^2
			High	Medium	Low		
Sex of the student	Female	Frequency	11	34	141	186	0.944^{NS}
		% within sex	5.9%	18.3%	75.8%	100.0%	
		% within the total students	61.1%	56.7%	51.8%	53.1%	
	Male	Frequency	7	26	131	164	
		% within sex	4.3%	15.9%	79.9%	100.0%	
		% within the total students	38.9%	43.3%	48.2%	46.9%	
Row Total in percentage			5.1%	17.1%	77.7%	100.0%	

NS – not significant

more home bound due to cultural factors, they get opportunity to spend more time at home than boys which in turn would have influenced them to develop better reading and note taking habits.

STUDENTS' STATUS ON ACADEMIC SELF-CONCEPT ACROSS GENDER

Both male and female students were found to possess similar pattern of distribution across the levels of academic self-concept scale. As shown in table 4, a small (5.9%) proportion of the female participants was observed to belong to the upper (high) category in the academic self-concept scale. In this regard, as one goes down in the scale, the share of these participants increase and reached to 77.7% at the lower level of the construct. Similarly, 4.3% of male participants belong to the upper (high) level of the academic self-concept scale; and as one goes down in the scale the proportion of these participants across the category increase and reached 79.9% at the lower level. Although the difference observed between male and female students in their experience of academic self-concept was very small, comparatively, a favorable tendency was observed among female students. In table 4, it is indicated that the proportion of female students surplus that of male participants in their share to the medium and upper (high) level of the academic self-concept scale, which is 56.7 % female and 43.3 % male in the medium; and 61.1 % female and 39.9 % male in the upper level. On the contrary, the percentages share of male students in the lower level of the construct exceeds that of female students.

To test the statistical significance of the variations observed between male and female students in their distribution across the different levels of the academic self-concept, Pearson Chi-square was computed and was not found significant (X^2 (2, N = 350) = .944, p = .624, two-tailed). This is to mean that the participants' experienced level of academic self-concept is independent of their gender. In other words, the observed difference between male and female students was not statistically adequate to say that gender matters. Moreover, apart from the levels of academic self-concept, an attempt was made to investigate gender difference in the students' overall academic self-concept. As a result, as indicated in table 5, the level of academic self-concept held or experienced by the students was found to be independent of their gender. This is so since the test of

Table 5. Independent-sample t-test between the students' gender on Academic self-concept and Study habit

Constructs	sex	N	Mean	Std. Deviation	't' value	Sig. (2-tailed)	df
Academic	female	186	144.79	17.196	1.306^{NS}	.193	348
Self-concept	male	164	142.40	16.936			
study habit	female	186	144.67	19.974	.181^{NS}	.857	348
	male	164	144.30	17.804			

NS – not significant

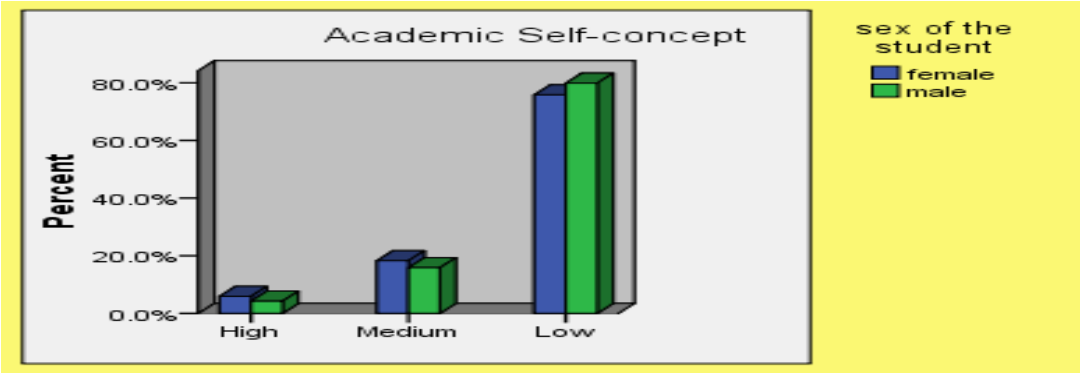


Figure 2. Status of male and female students on academic self-concept scale

significance for the mean difference between male and female students, concerning their overall academic self-concept, was obtained to be insignificant (t = 1.306, df = 348, p = 0.193, 2-tailed). For more information, please scrutinize the statistical data organized and presented in the tables here under.

However, regardless of this variation, significant difference was not seen between the sexes. This might be resulted, as indicated in Midgley, Anderman, and Hicks, 1995; Roeser et al., 1996), from an environment where students' academic goal adoption phenomena are less valued by significant individuals or groups, such as teachers and parents; and an environment characterized with normative comparison concerns. Moreover, this could imply, due to the changing trend in present days education system, the existence of social and educational environment ensuring similar provisions to both male and female students. Thus, since both groups are equally participating in all activities, there would be increased likely hood of experiencing similar academic self-concept between male and female students. Figure 2

SOCIO-ECONOMIC STATUS OF THE STUDENTS

In this section, the results obtained regarding the different attributes of the students' socio-economic status (SES), which mainly focuses on the households' poverty level, education status, Job condition, and the students' perception of own family's poverty level.

STATUS OF MALE AND FEMALE STUDENTS ON THE HOUSEHOLD'S POVERTY LEVEL

Table 6 depicts the distribution of male and female student across the different levels (very poor, moderately poor, and non-poor) of poverty to which the students' family belongs. As you can see in this table, 64.3% out of the total sample was found to come from households belonging to ''non-poor'' category. With respect to gender of the participants, the pattern of distribution across the levels of poverty was similar for both male and female students. As per the result, the proportional share of female students coming from "non-poor" households was found to take the highest (63.4%) share and those coming from the "very poor" households took the least (11.3%) share. Concerning the proportion of male students coming from the households of different poverty level, almost the same pattern as the proportional share of female students was found to happen.

When weighed against the expected share of male and female participants coming from specific poverty level, there was slightly lower share of male students coming from families that lay in the "very poor" category; that is, 56.8% female and 43.2% male (refer table 6). On the contrary, the share of female students in the "non-poor"

Table 6: Distribution and Comparison of male and female students on poverty level (N = 350)

			Poverty Level			Total	X^2
			very poor	Moderately poor	Non poor		
	Female	Frequency	21	47	118	186	
		% within sex	11.3%	25.3%	63.4%	100.0%	
		% within poverty level	56.8%	53.4%	52.4%	53.1%	.241^{NS}
sex of the student	Male	Frequency	16	41	107	164	
		% within sex of the student	9.8%	25.0%	65.2%	100.0%	
		% within poverty level	43.2%	46.6%	47.6%	46.9%	
		% of Row Total	10.6%	25.1%	64.3%	100.0%	

NS – not significant, p = .887, df = 2, 2-tailed

Table 7*:* Distribution and Comparison of male and female students on job status of the household head (N = 350)

		Job status of the household head						Total	X^2
Sex of the student	Statistic	Employed	Farmer	Trade	Daily laborer	Retired	Unemployed		
	Frequency	95	21	33	5	10	22	186	
	% within sex	51.1%	11.3%	17.7%	2.7%	5.4%	11.8%	100.0%	
Female	% within job status	54.0%	38.9%	66.0%	62.5%	45.5%	55.0%	53.1%	8.63^{NS}
	Frequency	81	33	17	3	12	18	164	
	% within sex	49.4%	20.1%	10.4%	1.8%	7.3%	11.0%	100.0%	
Male	% within job status	46.0%	61.1%	34.0%	37.5%	54.5%	45.0%	46.9%	
Row Total in percentage		50.3%	15.4%	14.3%	2.3%	6.3%	11.4%	100%	

NS = not significant, p =0.125, df = 5, 2-tailed.

category was found to be slightly lower than the share of male students. This is 52.4% female and 47.6% male. However, regardless of those observed variations, the probable occurrence of such variation that can be attributed to chance or sampling error was computed to be 0.887., which is big statistic measure of occurrence. Therefore, both male and female students were coming from families under similar poverty level. Hence, there is no adequate evidence for gender difference in any of the remaining variable to be attributed to the households' poverty level to which the student belongs.

STATUS OF MALE AND FEMALE STUDENTS ON JOB STATUS OF THE HOUSEHOLD HEAD

A higher (50.3%) proportion of the participants were found to come from employed household heads and those from daily laborers took the least (2.3%) share, see table 7. The proportion of female students belonging to household heads of different job conditions was found to take the order: Employed, Trade, Unemployed, Farmer, Retired, and Daily laborer, taking higher share to lower share respectively.

Similarly, except for the students coming from the households involved in trade and farming, the share of male students took similar pattern as that of females. Almost equal proportion of male and female students was found to constitute the "employed" and "unemployed" household heads job status; but, variations were observed in the job categories: Farmer, Trade, Daily laborer, and Retired. The gender wise proportional share for the job conditions: Trade and Daily laborer was opposite to the job conditions: Farmer and Retired.

Table 8: Distribution and comparison of male and female students on Education level of household heads (N = 350)

			Education level of the household head					Total	
			illiterate	Primary (1-8)	secondary(9-12)	College (10+s,12+s)	first degree and above		X^2
sex of the student	Female	Frequency	35	64	30	21	36	186	
		% within sex	18.8%	34.4%	16.1%	11.3%	19.4%	100.0%	
		% within education level	52.2%	53.3%	51.7%	44.7%	62.1%	53.1%	3.278^{NS}
	Male	Frequency	32	56	28	26	22	164	
		% within sex t	19.5%	34.1%	17.1%	15.9%	13.4%	100.0%	
		% within education level	47.8%	46.7%	48.3%	55.3%	37.9%	46.9%	
		% of Row Total	19.1%	34.3%	16.6%	13.4%	16.6%	100.0%	

NS – not significant

However, regardless of the apparent variations observed, the test revealed that the proportional share of both male and female students attending school did not explained by whatever the household heads' job status could be. Therefore, as per to this result, the job condition of the household heads from which the students were coming could not have significant contribution to gender differences that could be observed in the other variables.

STATUS OF MALE AND FEMALE STUDENTS ON EDUCATION LEVEL OF THE HOUSEHOLD HEAD

As shown in table 8, most (34.3%) of the students were from families in which the household heads had completed primary education and the second larger percent (19.1%) from illiterate household heads. Students coming from families with the household heads' education level of secondary school, degree and above took a share of 16.6% each; and the remaining 13.4% from household heads of college level educational status. Regarding the distribution of male and female students across the different education status of their household heads, an apparent variation was observed; but not significant (X^2 (4, N = 350) = 3.278, p = .512, 2-tailed) enough to bring gender difference in the other variable of this research interest.

STATUS OF MALE AND FEMALE STUDENTS ON PERCEIVED LEVEL OF POVERTY

This level of poverty relies on the participants' judgment of the relative living standard of own family. Accordingly, as depicted in table 9, 44.6% of the participants were found to hold a perception that their household belongs to the "poor" category of the poverty level and the next higher (23.4%) proportion of the participants held perception that their family belongs to the "medium" poverty level. Only few (4.9%) students perceived their households' poverty level as "very rich". Moreover, a similar pattern of distribution was observed between male and female students concerning the perception they held about the poverty level of the family to which they belong. On the contrary, among those students who had perceived their families poverty level as "very rich", female students took a share of 64.7% and male students took the remaining 35.3 %.

However, both sexes held almost equal share in their perception of their family belonging to the "medium" poverty level. Regardless of these all variations observed between male and female students concerning their tendency of perceiving the poverty level of the household to which they belong, the statistical test of independence was not found to be significant {X^2(4, = 6.46, p = .168, 2-tailed}. Thus, the tendency to perceive one's family living

Table 9: Distribution and Comparison of male and female students on perceived level of poverty (N = 350)

			perceived level of poverty					Total	X^2
			very poor	poor	medium	rich	very rich		
sex of the student	Female	Frequency	22	85	44	24	11	186	6.46^{NS}
		% within sex	11.8%	45.7%	23.7%	12.9%	5.9%	100.0%	
		% within perceived level of poverty	39.3%	54.5%	53.7%	61.5%	64.7%	53.1%	
	Male	Count	34	71	38	15	6	164	
		% within sex of the student	20.7%	43.3%	23.2%	9.1%	3.7%	100.0%	
		% within perceived level of poverty	60.7%	45.5%	46.3%	38.5%	35.3%	46.9%	
		% of Row Total	16.0%	44.6%	23.4%	11.1%	4.9%	100.0%	

NS – not significant

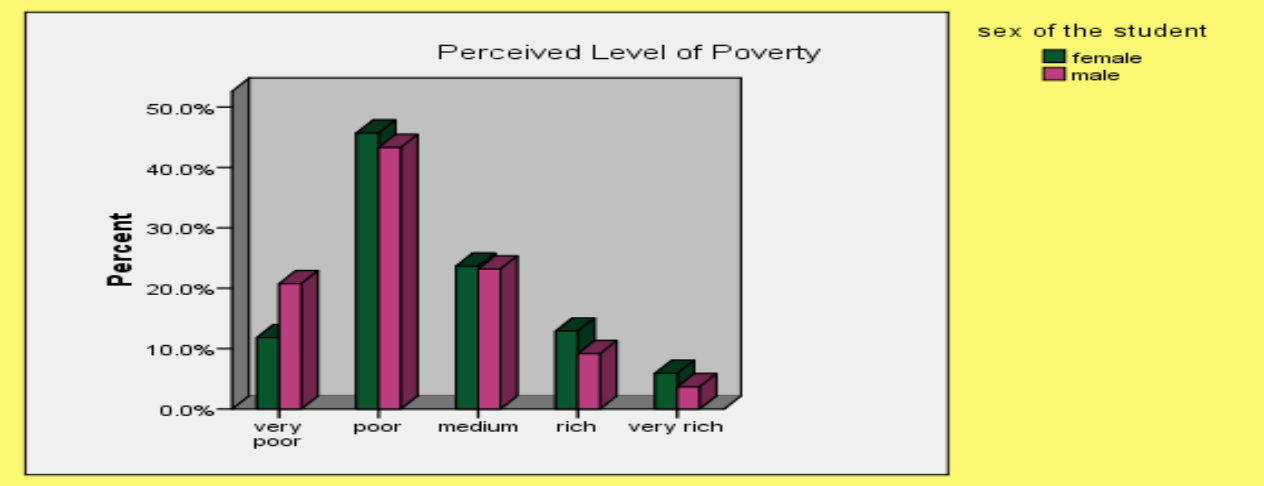


Figure 3. Status of male and female students on own perception of the households' poverty level

standard to any one of the category in the poverty level was not dependent on the sex of the participant. Figure 3

THE STUDENTS' STATUS ON ACADEMIC ACHIEVEMENT

According to this study, academic achievement refers to the students' performance on teacher made tests. This section presents the cumulative result of male and female students' performance in sciences (Biology, Chemistry, and Physics) and Mathematics. Among the total sample, a higher proportion (48%) of the participants were found to have low score of total academic achievement and smaller (13.1%) proportion of students fall in the upper (high) category of the academic achievement level. Both sexes were found to have similar pattern of distribution across the total academic achievement levels: higher share in the "low" category and lower share in the "high" achievement category, refer table 10. Though variation in the distribution of male and female students at each level of the category was Observed, there was not statistically significant evidence to attribute the difference to sex of the student. Moreover, the mean difference between male and female students' achievement in science and mathematics was not statistically significant, see table 11. Generally, although not statistically significant, female students were found to score higher than male students did.

Table 10: Distribution and comparison of Male and Female Students on total academic achievement level (N =350)

			Levels of total academic achievement			Column	X^2
			High	Average	Low	Total	
Sex of the student	Female	Frequency	24	77	85	186	**1.115^{NS}**
		% within sex	12.9%	41.4%	45.7%	100.0%	
		% within the total students	52.2%	56.6%	50.6%	53.1%	
	Male	Frequency	22	59	83	164	
		% within sex	13.4%	36.0%	50.6%	100.0%	
		% within the total students	47.8%	43.4%	49.4%	46.9%	
		Row Total	13.1%	38.9%	48.0%	100.0%	

NS – not significant, p = .573, df = 2, 2-tailed

Table 11. Independent-sample t-test between male and female students on Academic achievement (N = 350)

	Male (N=164)		**Female (N=186)**		**'t' value**	**Sig. (2-tailed)**	**df**
	Mean	SD	Mean	SD			
Total Academic Achievement	65.70	12.135	67.51	10.921	1.367^{NS}	.143	348

NS – not significant

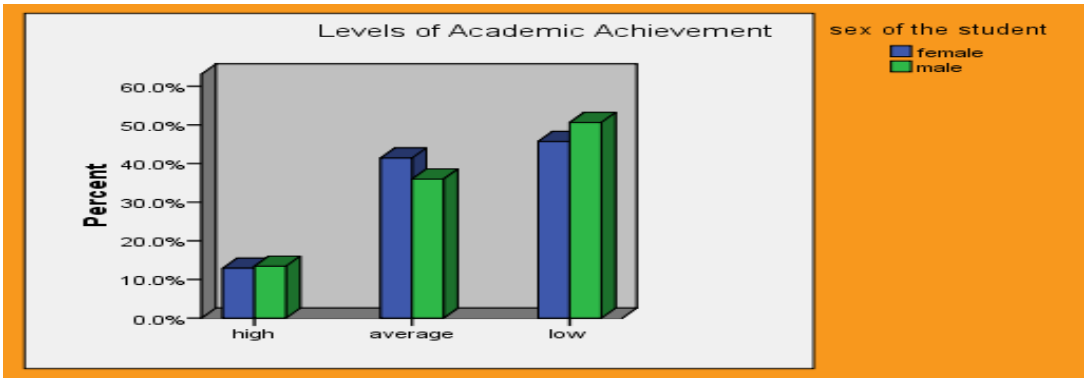


Figure 4. Status of male and female students on science and mathematics achievements

RELATIONSHIP AMONG STUDY HABIT, ACADEMIC SELF-CONCEPT, SOCIO-ECONOMIC STATUS, AND ACADEMIC ACHIEVEMENT

In this section, the results of Pearson's correlation coefficient (computed for the variables measured at interval level) and Pearson' chi-square computed to see association of the variable at the categorical level are presented in table 12

RELATIONSHIP BETWEEN STUDY HABIT, ACADEMIC SELF-CONCEPT, AND ACADEMIC ACHIEVEMENT

As to the result of Pearson correlation coefficient, a strong and positive relation was found between the variables: study habit and academic achievement (r = .493, N = 350, p < .005, 2-tailed test), study habit and academic self-concept (r = .631, N = 350, p < .005, 2-tailed test), academic self-concept and academic achievement (r = .424, N = 350, p < .005, 2-tailed test). The strength of the relationship between study habit and academic self-concept is moderate since 39.82% of the change is explained by their interdependence. Similarly, the effect size for the relations between study habit and academic achievement, academic self-concept and academic achievement is 24.30%, 17.98%, respectively. This result is actually in line with many research findings so far conducted in different areas by different scholars. This implied that the students' level of study habit being

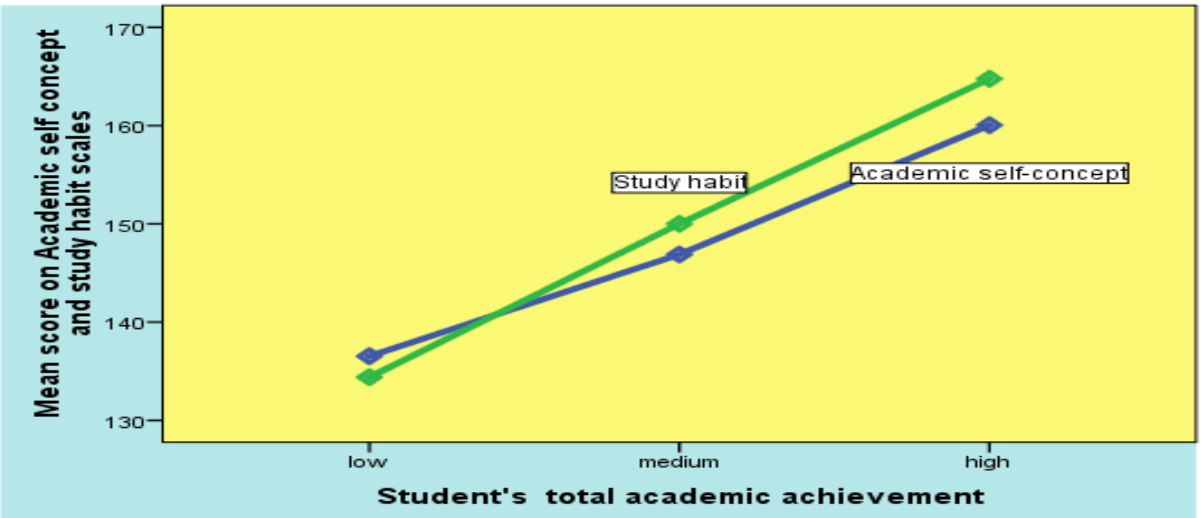


Figure 5. The students' study habit and academic self-concept status in relation to their academic achievement

Table 12. Pearson's test of correlation results (N = 350)

		Academic Self-concept	study habit
Academic Achievement	r	.424**	.493**
	Sig. (2-tailed)	.000	.000
Academic Self-concept	r		.631**
	Sig. (2-tailed)		.000

**. Correlation is significant at the 0.01 level (2-tailed).

experienced was not independent of their academic self-concept, perceived level of poverty, and the poverty level of the households to which they belong. Figure 5

ASSOCIATION BETWEEN STUDY HABIT, ACADEMIC SELF-CONCEPT, ACADEMIC ACHIEVEMENT, AND SE VARIABLES

In this section, the Pearson's chi-square test result for the independence of each and every variable is presented. Accordingly, as displayed in table 13, the students' level of study habit being experienced was not independent of their academic self-concept, perceived level of poverty, and the poverty level of the households to which they belong. Statistically significant relationship was also observed between the students' study habit and academic achievement with high effect size, i.e., the level of study habit that the students held accounted for 93.51% of the variance in their score of academic achievement. However, there was no statistically significant relationship of study habit with the household head's education level and job status from which the students came. There was statistically significant association of the students' academic self-concept with perceived level of poverty, and academic achievement with an effect size of 74.13 % and 31.70%, respectively. But, there was no statistically significant relationship of the students' academic self-concept with level of poverty, job status, and education status of the household heads to which the students belong. Academic achievement of the students was not related to poverty level and education status of the students' family heads. For better understanding, please scrutinize table 13. Figures 6 & 7

INFLUENCE OF STUDY HABIT, ACADEMIC SELF-CONCEPT, AND SES ON ACADEMIC ACHIEVEMENT

As indicated in table 14, Study habit, academic self-

Table 13. Summary of Pearson's chi-square (X^2) test of association results (N =350)

		Poverty level	Job status	Education level	Perceived level of poverty	Academic Self-concept	Study habit
Study habit	Pearson Chi-square ($X^{2)}$	11.047*	13.979	10.057	86.808**	-	-
	Sig.(2-tailed)	.026	.174	.261	.000	-	-
	df	4	10	8	8	-	-
	Phi	.178			.498		
Academic self-concept	Pearson Chi-square (X^2)	6.678	13.969	5.289	2.59E2**	-	1.813E2**
	Sig.(2-tailed)	.154	.174	.726	.000	-	.000
	df	4	10	8	8	-	4
	Phi				.861		.720
Academic achievement	X^2	7.163	19.059*	4.059	61.363**	1.108E2**	3.272E2**
	Sig.(2-tailed)	.127	.040	.852	.000	.000	.000
	Df	4	10	8	8	4	4
	Phi		.233		.419	.563	.967

****. Significant at p < .0005, *. Significant at p < .05**

concept, and perceived level of poverty were found to have statistically significant influence on academic achievement (F (2, 329) = 46.50, p < .0005, η^2 = .22; F (2, 329) = 23.587, p = .016, η^2 = .125; and F (4, 329) = 2.523, p = .042, η^2 = .03, respectively). On the contrary, the students' gender, poverty level of the household, job condition and education status of the household heads did not have statistically significant influence on the students' academic achievement. The variables that were found to have main effect on the academic performance of the students have three and above levels. This leads to the need to employ post-hoc test so as to see where the difference lies. Hence, the result of test of multiple comparisons for the means of academic achievement across the levels of each category revealed as follows.

For the factor study habit, the mean difference between good and average study habit; between good and poor study habit; and between average and poor study habit was statistically significant (all at p < .0005). This means that students who show difference in study habit experience also shows difference in their academic performance. In other words, students who have 'good' study habit practice will have better performance in academic achievement than those who have 'average' and 'poor' study habit practices; and those with poor study habit practices will have poorer academic performance.

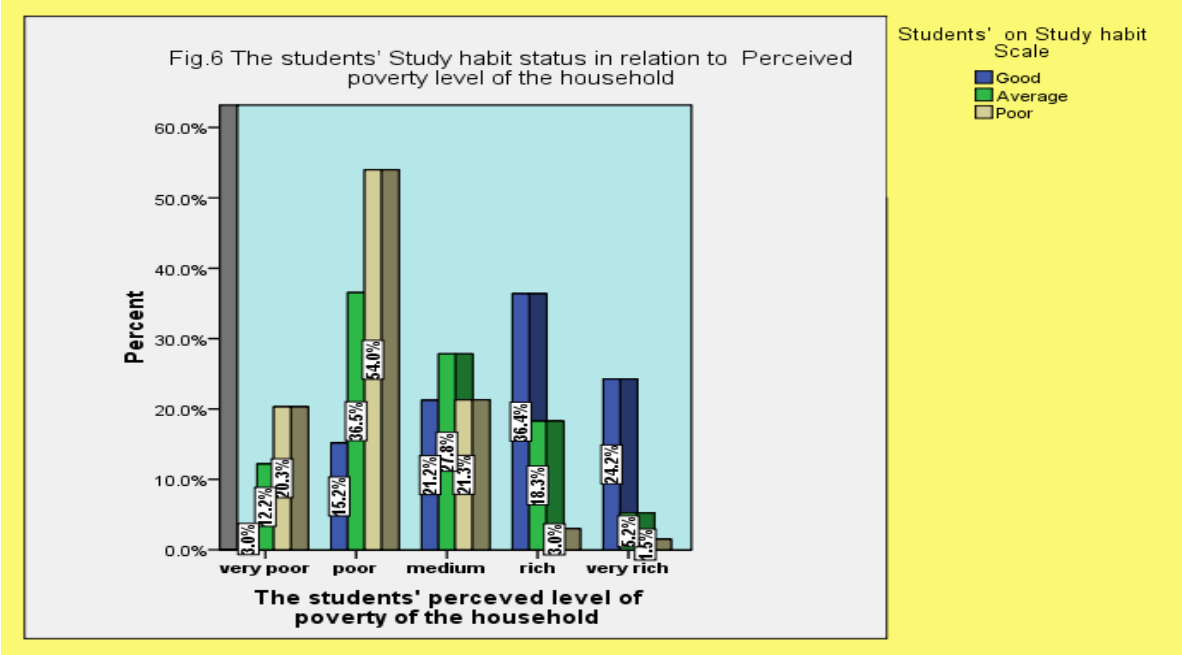
For the factor academic self-concept, the mean difference between 'high' and 'low' academic self-concept; and the difference between 'medium' and 'low' academic self-concept was statistically significant (both at p < .0005). In a similar sense, this reveals that students experiencing different levels of academic self-concept show difference in their academic performance. But, there was no significant mean difference in academic achievement between the student who held high and medium academic self-concept. Thus, students who have held 'high' and 'medium' academic self-concept perform better in academic achievement than those who held 'poor' academic self-concept.

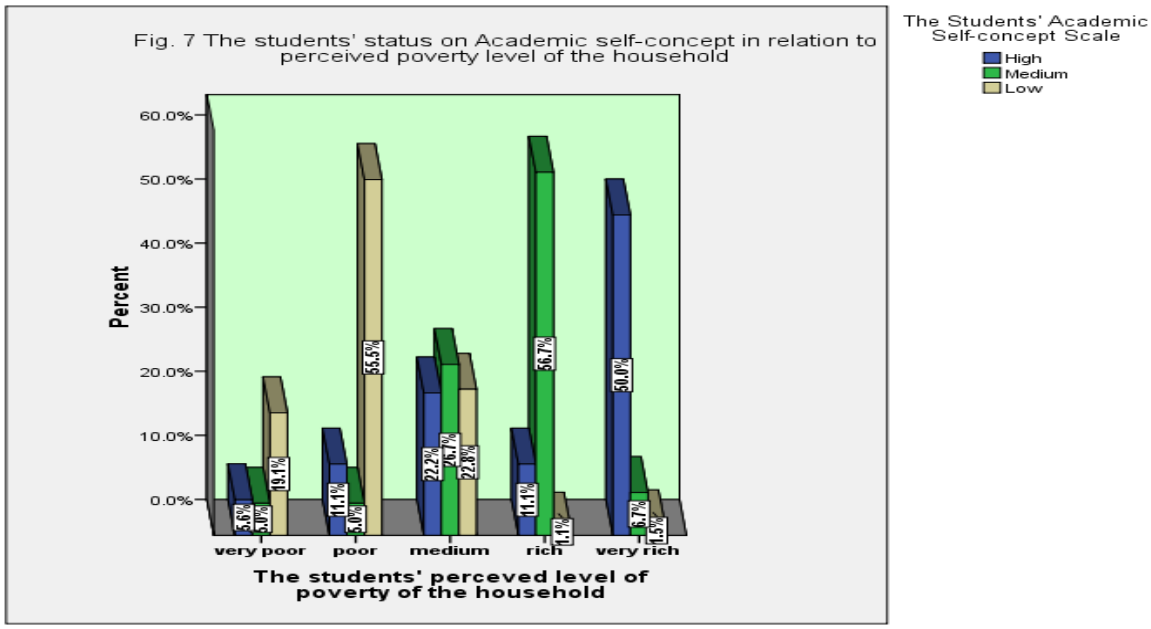
Concerning the factor perceived level of poverty, the significant mean difference lies between very poor and rich, poor and rich, medium and rich, very poor and very rich (all at p < .0005), and between poor and very rich (p < .024). There was no significant difference between the levels: poor and very poor, rich and very rich.

Regarding the interaction effect of the variables on the students' academic performance, there was significant difference in the academic performance of the students that could be attributed to the combined effect of the variables: perceived level of poverty and job status of the household heads. That is, there was two-way significant interaction effect of "Household head's job status * perceived level of poverty" (F (7, 245) = 2.078, p = .047, $\eta^{2 =}$ .056). However, there was no significant interaction effect between the rest of the variables of this study. Table 15

CONCLUSIONS

Based on the findings reached, the following conclusions





were drawn.

- There was a certain level of deficiency in the educational environment in supporting students to experience positive self-perceived academic capabilities and equipped with favorable study habit experiences. This is so, for Majority of the students was found to have poor study habit and low academic self-concept.
- Academic self-concept, study habit, academic achievement in science and mathematics, and perceived level of poverty were independent of the students' sex (being male or female)
- The variables: academic self-concept, study habit, perceived level of poverty, and academic achievement are not independent of one another.

Table 14. Summary of Two-way Analysis of variance (ANOVA) for the main effect of the variables on Academic achievement

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
sex	43.166	1	43.166	.554	.457	.002
Study habit	7251.146	2	3625.573	46.500	.000	.220
Academic self-concept	3678.165	2	1839.083	23.587	.016	.125
Perceived level of poverty	786.884	4	196.721	2.523	.042	.030
Poverty level	67.940	2	33.970	.436	.647	.003
Household head's Education status	476.165	4	119.041	1.527	.194	.018
Household head's job status	598.472	5	119.694	1.535	.178	.023
Error	25651.838	329	77.969			
Total	34933.78	350				

Table 15. Multiple Comparison of means on academic achievement (PHT)

1. Levels of Study habit			**Good**	**Average**	**poor**
Good	Mean difference		-	10.57*	21.71*
	Sig.		-	.000	.000
Average	Mean difference		-	-	11.14*
	Sig.		-	-	.000
2. Levels of Academic self-concept			High	medium	Low
High	Mean difference			5.110	17.446*
	Sig.			.177	.000
Medium	Mean difference				12.336*
	Sig.				.000
3. Perceived level of poverty	Very poor	poor	medium	rich	Very rich
Very poor	Mean difference	1.605	3.338	14.656*	9.966*
	Sig.	1.000	.730	.000	.000
Poor	Mean difference		1.733	13.051*	8.361*
	Sig.		1.000	.000	.024
medium	Mean difference			11.318*	6.628
	Sig.			.000	.208
rich	Mean difference				-4.690
	Sig.				1.000

*. Significant at $p < .05$

NB. For all cases, mean difference = mean of higher-level category – mean of lower level category

- The students' achievement in science and mathematics is dependent on the job condition of the household heads but not dependent on the poverty and education levels of the household head to which the students belong. The students' perception of their families living condition or poverty level has significant influence on their academic achievement rather than the actual poverty level.
- The students' academic achievement is significantly affected by their level of academic self-concept, study habit, and the perceived level of poverty level held about their family. This is because these variables were found to have significant main effect on the students' academic achievement.

- The influence of perceived level of poverty, carried by students about their family, on their academic achievement is a function of the job conditions of the household heads from which the students came. This is true since these variables were found to have significant interaction effect on the students' academic achievement.

RECOMMENDATIONS

Based on the findings reached, the researchers have made the following suggestions.

- It will be appropriate and helpful if school principals and the district education officers pay attention to the healthy development of the students' psychological and pedagogical constructs, specifically academic self-concept, and study habit, which could be realized through the provision of training on assertiveness, academic or achievement motivation, and study skills to students. We would like also to suggest the concerned bodies to use AKU, which carries community services as one of its official mission, as a resource institution for professional support and provision of the necessary trainings.
- It will be also nice to take the advantage that the students' experience of academic self-concept, study habit, academic achievement, and the students' perception of the household's poverty level are independent of their sex. This means that the provision of equitable support to both sexes can help the students' to equally inspire favorable academic self-concept, develop good study habits, and thereby equally compete in science and mathematics.
- Rather than the actual poverty level the perceived level of poverty have more weight in influencing the students' study habits, academic self-concept, and academic achievement. Thus, it will be nice for teachers, principals, and parents to help the students give positive regard to their living conditions. This could be done by providing students with reading texts on life skills, attribution, achievement motivation, and arranging trainings, counseling sessions when necessary. Therefore, it is mandatory for schools to have full-time professionals in school or educational psychology who are capable of providing all these.
- Rendering students with special support should preferably base on the students family back ground such as job condition rather than sex. This is so for the fact that families of different job condition can hold different value about their children's schooling. For example, none of the students coming from 'unemployed' household heads was found to have high academic self-concept. Therefore, it would be helpful for school principals to have purposive and complete profile of the student since this cab help easily intervene when needed.
- It seems not as such striking to prepare special academic support for only female students. Rooms should be open for all low achieving students. In other words, students should get academic support not based on their sex but their performance. This in turn can give opportunity for female students to experience success because of their effort not due to special support.
- It is recommendable for interested researchers to investigate that why household head's education and poverty level have not significant effect on the students' academic performance.

REFERENCES

Bong, M., & Skaalvik E. M. (2003). *Academic Self-Concept and Self-Efficacy: How Different Are They Really?* Educational Psychology Review, 15, 1-40.

Bradley, R. H., & Corwyn, R. F. (2002). *Socioeconomic status and child development.* Annual Review of Psychology, 53(1), 371-399.

Conger, R. D., & Donnellan, M. B. (2007). An interactionist perspective on the socioeconomic context of human development. Annual Review of Psychology, 58(1), 175-199.

Dweck, C.S. (1999). Self-theories: Their role in motivation, personality, and development. Philadelphia, PA: Psychology Press.

Ethiopian Education and Training Policy (1994). Addis Ababa, MoE.

Fredu,N.,(2008). "*Poverty, Asset accumulation, Household livelihood and Interaction with local institutions in Northern Ethiopia",* PhD Thesis, University of Leuven, Belgium.

Marsh, H., Köller, O., & Baumert, J. (2001). *Academic self-concept, interest, grades and standardized test scores:* Reciprocal effects models of causal ordering. *Child Development, 76*, 397–416.

Minstry of Education (2010). *Educational sector development program IV (ESDP IV),* Addis Ababa

Malathi, W.P. (1987). *Aspiration, motivation and achievement*. Perspectives in Education, 3(2): 102-110.

Midgley, C., Anderman, E., and Hicks, L. (1995). *Differences between elementary and middle school teachers and students:* A goal theory approach. J. Early Adolesc. 15: 90–113.

Nayak, A.K. and Rao, V.K.(2004). *Education Psychology*: A.P.H. Publishing Corporation, New Delhi.

National Organization for Examination (2004). *Ethiopian Second National Learning Assessment*, Addis Ababa.

National Organization for Examination. (2000).Ethiopian National Baseline Assessment on Pupils' Achievement. Addis Ababa; Unpublished

Nuthana, P. G., (2007). *Gender analysis of academic achievement among high school students*. Thesis, Uni. Agric. Sci., Dharwad.

Panda, B.N. (1992). *Study habits of disadvantaged and non-disadvantaged adolescents in relation to sex and academic performance*. Indian J. Psy Edu. (ISSN 0378-1003), 23(2) : 91-96.

Patel, B. V. (1976). *Manual for study habits inventory, Agra Psychological Research cell*, Tiwari Kothi, Belanganj, Agra, 1-8.

Ramaswamy, R. (1990). *Study habits and Academic Achievement*. Expt. Edu., 18(10): 255-260.

Reynolds, W.M. (1988). *Measurement of academic self-concept in college students. Journal of Personality Assessment,* 52(2), 223-240.

Robinson, W.P. (1976). *The achievement motive, academic success and intelligence test scores.* Bri. J. Clin. Psy., 4: 98-103.

Roeser, R. W., Midgley, C., and Urdan, T. C. (1996). Perceptions of the school psychological environment and early adolescents' psychological and behavioral functioning in school: The mediating role of goals and belonging. J. Educ. Psychol. 88: 408–422.

Sampath, S. And Selvarajgnanaguru, A. (1997). *Study Habits of Higher Secondary Commerce Students.* J. Edu. Res. Extn., Jan., 33(3)

Sirin, S. R. (2005). *Socioeconomic status and academic achievement: A meta-analytic review of research.* Review of Educational Research

Stella and Purushothaman, S.(1993). *Study habits of under achievers*. J. Edu. Res. Extn., April, 29(4): 206-214.

Sud, A. And Sujata. (2006). *Academic performance in relation to self-handicapping, test anxiety and study habits of high school children.* Nati. Aca. Psy., 51(4): 304-309.

Verma, B.P. (1996). *Test of Anxiety and Study habits: A study of their main and interaction effects on Academic Achievement*. Indian J. App. Psy., 33(2): 55-61.

Wigfield, A., & Karpathian, M. (1991). *Who am I and what can I do? Children's self-concepts and motivation in achievement situations.* Educational Psychologist, 26, 233-261.

Wangoo, M.L. and Khan, M.A. (1991.). *Socio economic status and academic achievement.* A Comparative study of Govt. and Pvt. School Students – Indian Psy. Rev., 36(2): 1-10.

Zarb, J.M. (1981). *Non-academic predictors of successful academic in a normal adolescent sample.* Adolescence, 16(64): 891-900.