

**ADDIS ABABA UNIVERSITY**  
**SCHOOL OF GRADUATE STUDIES**

**THE INFLUENCE OF SOME PSYCHOLOGICAL  
VARIABLES ON ACADEMIC  
ACHIEVEMENT OF STUDENTS IN  
HIGH SCHOOLS, THE CASE OF  
ARSI ZONE**

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HIGH SCHOOLS, THE CASE OF  
ARSI ZONE**

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**ABSTRACT**

*The purpose of this study was to find out the joint and relative contributions of locus of control, achievement motivation future time orientation, and sex to the prediction of academic achievement of high school students. Moreover, the study aimed at investigating (I) sex differences in locus of control, achievement motivation, and future time orientation ; (ii) the relation of these variables to the academic achievements of male and female students; (iii) joint and relative contribution of these variables to the prediction of the academic achievement in each sex group. The subjects participated in this study were 303 regular (157 male and 146 female) students of high schools in Arsi Region. The method used to select the subjects was stratified multi-stage sampling. The instruments employed in data collection were Children's Nowicki and Strickland Internal-External scale (Nowicki & Strickland 1973), achievement motivation questionnaire (Hermans, 1970), and future time orientation scale (Gjesme, 1979). Academic achievement scores of the subjects were secured from rosters. Multiple regression analysis, t-test, correlation, and correlation difference test were employed in the nalysis of the data. Accordingly, the result of multiple regression analysis indicated that locus of control, achievement motivation, future time orientation and sex have significant joint contributions to the prediction of high school students' academic achievement. However, further analysis of beta weights of each variable demonstrated that only sex and future time orientation have significant relative contribution to the prediction of the academic achievement of the group. With regard to sex differences in locus of control, achievement motivation, and future time orientation, t-test revealed non-significant differences between the two sex groups in these variables. According to the result of the correlation procedure, locus of control and future time orientation were significantly related to academic achievement of female students, while achievement motivation was not. On the other hand, non of the three variables was significantly related to the academic achievement of the male group; and hence there was no need of carrying out regression analysis for this group. As implied by correlation coefficients, correlation difference test confirmed that locus of control and future time orientation were related to the academic achievements of female students more strongly than to those of male students. But the strength of relationship between achievement motivation and academic achievement was not significantly different for both sex groups. The result of multiple regression analysis on the data of female students showed that locus of control, achievement motivation and future time orientation had significant joint contribution to the prediction of academic achievement of this group. Nevertheless, further analysis of beta weights of each variable revealed that only future time orientation has significant relative contribution to the prediction of the academic performances of this sex group. Discussions and conclusions have been made on the basis of these results. Finally, some implications were indicated for possible interventions and for further inquiries.*

# CHAPTER ONE

## 1. INTRODUCTION

### 1.1. Background of the Problem

The extent of future economic, social and cultural development of a given society is greatly determined by the degree of intellectual development of the young generation. The extent of this intellectual maturation is again determined by the skill, competence, knowledge, and behavior that young people acquire in school. As a result, psychologists and educators have long been interested in understanding how students learn (Rosser & Nicholson, 1982). However, the extent of the attainment of these qualities by students is considerably influenced by different cognitive and psychological (non-cognitive) factors. Hence, the issue of identifying any factor that influences academic achievement of students has been of great interest to researchers in the field of education (Lusk, 1983).

Particularly the psychological variables such as attitude, interest, self-concept, self-efficacy, affective disposition, etc. are found to have a profound impact on the academic achievements of students (Mehren & Lehmen, 1969; Reed & Feldman, 1973; Mekonnen, 1987). As noted by Mekonnen (1987), these variables may either facilitate or hinder students' learning.

Locus of control, achievement motivation, and future time orientation are some of the psychological variables which are found by several researchers to be significant predictors of the academic performance of students (Crandall et al, 1965, Bar-Tal & Bar-Zohar, 1977; Loa, 1980; Wolf & Savickas, 1985; Duda & Nichols, 1992; Allen et al., 1974; Bar-Tal et al., 1980; Loa, 1980; Devolder & Lens, 1982). According to the findings of these investigators students who are in a good state of these variables perform better in their school achievements than those who are in a poor state of the same.

Sex differences in these variables have also been demonstrated by many of the research works in this area (Findlyey & Cooper, 1983; McClelland et al., as cited in Klein (1982), Lamm, et al. 1976). Moreover, the differential impacts of these variables on the academic achievement of male and female students have been underscored by several scholars (e.g., Dugovice, 1977; Brown, 1980; Loa, 1980)

In Ethiopia, students' poor academic performance and the rise of repetition rate in a class was repeatedly reported by researchers (e.g., Tekeste, 1990; Siyum, 1996; Alemtsehay, 1985) in the area of education. Several writers also underlined that this problem becomes worse among female students (Genet, 1991; Aseffa, 1991; Tsion & Wana, 1994; Tsion, 1993).

These investigators have attempted to identify the root of this problem in the Ethiopian education. However, majority of them have mainly focused on the environmental factors such as number of students assigned to a classroom, period of time for which students stay in schools, number of subjects (courses) offered, job opportunity after graduating from high school, educational facilities, teacher qualification, tradition of the society, etc. The impacts of psychological factors such as attitude, self-concept, locus of control, achievement motivation, future time orientation, etc. on academic achievement of students were not sufficiently investigated (Daniel, 1992; Zenawi, 1997; Belay, 1996; Dessalegn, 1993). Hence, it appears important to investigate the extent to which these variables predict the academic achievement of students in Ethiopia. In this study locus of control, achievement motivation, and future time orientation were mainly focused.

The study was organized into five chapters. The second chapter deals with review of literature. In this part of the study, research works done on the impacts of locus of control, achievement motivation, and future time orientation on academic achievement were reviewed. Moreover, studies on sex differences in these variables and their differential influences on male and female students' academic performance were reported. In chapter three the subjects, method of sampling, instruments, method of data

collection, and methods of data analysis were described. The fifth and final chapter deals with discussion, summary, conclusions, and implications.

## **1.2. Statement of the Problem**

As pointed out above, in the last few years, only few studies have been conducted to examine the relationship between the academic achievement of students and locus of control, achievement motivation, and future time orientation in separately. The results of these studies have revealed the existence of positive relation between these variables and academic achievement of students at college and high school levels. However, studies done by taking these variables together to see the extent to which they, jointly and separately, predict the academic achievement of high school students seem absent. Again, the joint and separate predictive roles of these variables in academic achievement of this group in terms of sex difference were hardly studied in detail.

Hence, the main purpose of this study was to investigate the combined and relative contribution of these variables to the prediction of academic achievements of students in the selected high schools, and to examine whether these variables predict the academic performance of male and female students differently or not.

Accordingly, the study was designed to answer the following specific questions:

1. What are the combined and relative contributions of locus of control, achievement motivation, future time orientation, and sex to the prediction of academic achievement of high school students ?
2. Are male and female students having similar state of locus of control, achievement motivation, and future time orientation (eg., internal males vs internal females) significantly different in their academic achievement?

3. Do high school male and female students significantly differ in the above independent variables ?
4. Are these variables associated with the academic achievement of the two sex groups significantly ?
5. In which sex group are these associations (if any) stronger ?
6. Of the academic achievement of the two sex groups, which one is significantly (more) predicted (if any) by the independent variables taken together ?
7. What are relative contributions of these independent variables to the prediction of academic achievement in each sex group ?
8. Which of the independent variables is the most predictor of the academic achievement in each sex group?

### **1.3. Specific Objectives of the Study**

On the basis of the above stated questions, the specific objectives of this study focus on the following issues:

- Analyze the combined and relative contribution of locus of control, achievement motivation, future time orientation, and sex to the prediction of academic achievement of high school students.
- Examine the differences in academic performance between sexes similar in the state of locus of control, achievement motivation, and future time orientation.
- Study the differences between male and female subjects in terms of these independent variables.

- Study the association of the independent variables with the academic achievement in terms of sex differences.
- Investigate the joint and separate contribution of the independent variables to the prediction of the dependent variable (academic achievement) in each sex group.
- Compare the two sex groups in terms of the extent to which their academic achievements are predicted by the independent variables.
- Compare the independent variables in terms of their predictive roles in the dependent variable in each sex group.

#### **1.4. Significance of the Study.**

As indicated earlier in the section of “background of the problem”, locus of control, achievement motivation, and time orientation are the psychological variables that affect academic achievement of male and female students not only strongly but also differently. Hence research works on the impacts of these variables on students’ learning, particularly in terms of sex differences, appears to be of a paramount importance.

Therefore, it is hoped that the findings of the present study would:

- help understand the extent to which locus of control, achievement motivation, future time orientation, and sex, jointly and separately, predict the academic performance of high school students.
- Provide some data which help identify the sex group whose academic performance is more predicted by locus of control, achievement motivation and future time orientation.
- enable high-school counselors, teachers, and parents to get insight into the impacts (if any) of these variables on students’ academic performance, and initiate them to think of the ways of taking intervention measures as to:

- enhance students' belief that they can attain good academic rank only through their own action (hard work)
- build up their motive to achieve better, and
- boost their capability to perceive, plan (structure), time, and accomplish their future academic duties ahead of time.
- give the researchers in the field of education more insight into the contribution of these variables to the observed poor academic performance of high school male and female students at present.
- provide some implications for future reseach in the area.

## **1.5. Definitions of Important Terms**

### **1.5.1. Conceptual Definitions:**

Locus of control: refers to peopl's perceptions of personal control over life events (Findley & Cooper, 1983)

Intenrnal: refers to a person's belief that his/her behaviour can determine what will happen to him and that he is in control of his fate (Wolk & Duccett, 1973)

External: is a person's belief that he has little control vover those things that affect him (Wolk & Duccett, 1973) and that his attainment of desired goal is determined by luck, chance, fate, and powerful others.(Rotter , 1966).

Achievement Motivation: is defined as that behavior in which the goals to develop or demonstrat-to self or to others-high ability or to avoid demonstrating low ability (Nicholls ,1984).

Future Time Orientation: refers to an individual's attitude-particularly, his cognition and feelings-tward his future (Lamm et al., 1976)

Academic Achievement: refers to the results a student scores on teacher made or standerized achievemtn tests.

Psychological variables: are individual's personality characteristics that affect cognitive achievement (Mekonnen, 1987)

Sex: Being born male or female as a result of biological-chromosomal,hormanal, and physiological - differences (Millar, 1985)

### 1.5.2. Operational Definitions

Locus of control - refers to the scores of sampled students on Children's Nowicki and Strickland Internal-External control (CNSIE) scale.

Internal - refers to students whose score on CNSIE is below the median score.

External - is the students whos score on CNSIE is above the median score.

Achievement Motivation- refers to the scores sampled student have on achievement motivation self-report inventory (questionnaire).

Future Time Orientation - refers to the scores of the sampled student on the scale of future time orientation.

Academic Achievement: is average of scores obtained on classroom achievement tests for three semesters.

Psychological variables - locus of control, achievement motivation and future time orientation.

Sex - being male or female

## **1.6. Delimitation of the study**

This study would have generated more valid information if it had included more regions and more educational levels in the country. However, due to time and financial constraints, it was limited only to regular high school students (from grade 10 through 12) in Arsi Zone. Again, of the various psychological (non-cognitive) variables that influence students' academic achievement, the study focused mainly on locus of control, achievement motivation, and future time orientation. Sex was also considered in addition. The data analyses were also limited only to the total scores of these variables.

## CHAPTER TWO

### 2. REVIEW OF LITERATURE

The review of literature related to this study focuses on: the theoretical background of the independent variables (locus of control, achievement motivation, and future time orientation), research results about (a) the impacts of these independent variables on academic achievement of students (b) sex differences in the variables and their differential impacts on academic achievements of male and female students.

#### 2.1. Locus of Control

Locus of control is a construct used by social learning theorists, like Rotter, to designate People's Perceptions of Personal control over life events such as attainment of a desired goal (Findley & Cooper, 1983; Weiner, 1992)

In Rotter's (1966) theory of locus of control, people are categorized into internal or external on the basis of the perception of their control over life events. For example, according to Rotter (1966), when a person believes that the attainment of his/her desired goal is determined by his/her own initiatives and actions, then he/she is termed internal. On the other hand, if a person believes that the attainment of his/her desired goal is determined by luck, chance, fate, powerful others or unpredictable, then, he/she is termed external.

Realizing the impacts of these personal beliefs on achievement behavior, Rotter (1966) predicts that an internal person, as opposed to an external person, should be related to greater achievement effort, and because of this effort such person should be positively associated with greater achievement.

On the same line of argument, Grasha (1995) indicates that people with internal locus of control are likely to persist in the face of failure, persist at tasks, welcome and meet new challenges in their lives, take remedial actions to try and overcome their shortcomings, get good grades in school, etc. whereas people with external locus of control show the opposite characteristics.

### **2.1.1. Locus of Control and Academic Achievement**

Several studies conducted on the relationship between locus of control and academic achievement have demonstrated that the two variables are associated positively. For example, Bar-Tal et al., (1980) have investigated the relationship between locus of control and academic achievement of high school students. The result of the study showed that students with internal perception of locus of control were positively associated with high academic achievement while those students with external perception of locus of control were associated with low academic achievement.

Similarly, Loa (1980) studied the impact of locus of control and that of other factors on academic achievement of high school male and female students. As indicated in his findings, student with internal locus of control were found to be higher in their academic achievement than students with external locus of control.

Again in his cross-cultural research, Kishor (1983) examined the relationship between locus of control and academic achievement of high school students of Fiji Indians and Fidians in India. Kishor's finding has revealed that Fiji Indians were more internals, and had higher academic achievement than the Fidians in the subjects like English, Mathematics, and Science. Furthermore, analysis of individual data showed that, in both groups, internals were related to high academic performance, whereas those with external belief of locus of control were associated with low academic performance.

Studies conducted by Crandall et al. (1965), and that by McGhee and Grandall (1968) on elementary and high school students have also revealed that students with internal beliefs have achieved higher in their academic performance than those with external beliefs of locus of control. In the same studies internals were characterized by spending more time in academic activities than the externals.

Moreover, several writers have reviewed studies done on the relationship between locus of control and academic achievement, and all of them have come up with the conclusion that locus of control is positively related to the academic achievement of students (e.g., Findley & Cooper, 1983; Bar-Tal & Bar-Zohar, 1977; Uguroglu & Wolberg, 1979)

In spite of the fact that research results show positive relationship between locus of control and academic achievement of high school students, there are also studies revealing no or little relationship between the two variables. For example, Cole and Sapp (1988) have conducted a study on high school students, and reported that locus of control was poor predictor of academic achievement.

Similarly, in his investigation of locus of control and its relationship to intelligence and academic achievement in high school students, Brown (1980) has found that locus of control was not significantly related to academic achievement.

### **2.1.2. Sex Differences in Locus of Control**

This issue can be viewed from two angles-whether girls and boys differ in locus of control or not, and whether internality is related to academic achievement of both sexes differently or not.

Regarding the relationship between males and females in terms of locus of control, there is no agreement among the results of researches in the area. For instance, some researchers demonstrated that boys are more internal than girls (Loa 1980; Findley

& Copper, 1983; Mwamwenda & Mwamwenda, 1986; Misra, 1987; Stipek & Gralmiski, 1991) . On the contrary, others (e.g.,Crandal. et al., 1962; 1965; Cliford & Cleary 1972, Cooper et al, 1981; Darge, 1988) came up with results indicating that girls are more internal than the boys. Still there are studies which showed non-significant difference in internal orientation between boys and girls (Crandall & Lacy,1972; Liftishitz, 1973; Duke & Nowicki, 1973; Chandler & Dugvics, 1977; Richart, 1981; Edward & Watters, 1981; Tabbi et al., 1987; Cole & Sapp, 1988; Belay, 1994).

With regard to the relation of internal orientation to the academic achievement in both sexes, there is no agreement among results of studies. Some studies indicated that internality is positively related to academic achievement only for boys (Crandall et al., 1962; Findley & Cooper, 1983; Chandler & Dugovics, 1977). In substantiating these results, Chandler and Dugovics (1977) have also cited other studies which have come up with similar findings (Nowicki & Strickland, 1973; Hersch & Scheibe, 1967).

On the other hand, studies by Mwamwend & Mwamwend (1986); Troub (1982); and Brown (1980) revealed that internality is positively related to academic achievement only for girls. That is, locus of control did differentiate between high and low achieving girls, while it did not in the case of boys.

There are also writers who underscored that internality favours the academic performance of both males and females. (e.g., Cliford & Cleary, 1972; Loa 1980; Findley; Cooper, 1983; Ismail & Kang, 1985; Darge, 1988; Belay, 1994)

Still other researchers (Crandall et al., 1962; Cliford and Cleary, 1972) found negative relationship between locus of control and academic achievement in girls. That is, girls have shown superior internality but scored poorly in their academic performance.

## 2.2. Achievement Motivation

The concept of achievement motivation has its root in the work of Murray on the personality theory (Klein, 1982). As noted by Klein (1982), Murray has considered achievement motivation as one of the important acquired human motives such as need of dominance, affiliation, nurturance, autonomy, sex, etc.

Based on Murray's view, Weiner (1992) has explained achievement motivation as a desire to accomplish something difficult, to master ideas, to manipulate or organize persons and objects in the physical environment. Motivated persons, in the words of Weiner(1992), prefer working independently. Moreover, achievement oriented persons try to overcome obstacles not only to attain a high standard and excellence but also to surpass the success of others.

As observed by Klein (1982), McClelland (1958) and his associates also demonstrated that people with high achievement motivation are more motivated to perform in achievement conditions, more likely to prefer tasks of intermediate difficulty, respond at more efficient level, and persist longer in the face of failure when compared to people with low achievement motivation.

In similar vein, Hermans (1970) analyzed several research works (Isaacson, 1964; Little & Yeracaris, 1965; Feather, 1961; Atkinson, 1958; French, 1956; Kagan & Moss, 1962) and came up with the conclusion that highly achievement oriented people, as opposed to those with low achievement orientation, are characterized by intermediate aspiration level, high interest to surpass others, resuming incomplete tasks, choosing a competent and unsympathetic partner, being energetic and exhibiting novel instrumental activities and searching others' recognition.

### **2.2.1. Achievement Motivation and Academic Achievement**

Most of the results of research works conducted on the relationship between achievement motivation and academic achievement have repeatedly shown that these two variables are positively correlated. For example, Loa (1980) investigated the impacts of achievement motivation, locus of control, and dependency on academic achievement of high school male and female students. From the result of the study, Loa reported that students with high achievement motivation were associated with high academic performance (GPA) as compared to those with low achievement motivation.

Again in Ethiopia, Zenawi (1997) examined the impacts of achievement motivation and sex role orientation on academic achievement of high school students. In his study, Zenawi found achievement motivation to be the most predictor of academic achievement of the target subjects. Schulet et al. (1976) have also come up with similar results in their study on high school students.

In examining achievement motivation in high school graduates of years 1907-1967 and their occupational status, Matter (1977) also observed that individuals who were high in achievement motivation in their school days scored higher academic results, and owned higher occupational status than those who were low in the trait.

In a study on a related topic, Epps (1969) examined ability, self-concept and self-esteem as correlates of academic achievement of high school students. From the result of his study, Epps (1969) reported that students who were high in self-concept of ability and self-esteem achieved higher in their academic performance (GPA) than those who were low in the trait. This implies that there is a positive relationship between achievement motivation and academic achievement, as self-concepts and self-esteem are related to the former. Similar results have also been reported in other studies. (Lindgren et al., 1986; Packwood, 1973; Daniel, 1992; Wolf and Duccette, 1973; Entwistle, 1968). But there is one study by Crandall et al. (1962) which demonstrated non-significant correlation between these variables.

### **2.2.2. Sex Differences in Achievement Motivation.**

Different authors have drawn different conclusions from research results with regard to the manifestation of achievement motivation in females while they have come up with consistent inferences regarding the manifestation of the variable in males.

For instance, based on the finding of research by McClelland et al. (1953), Klein (1982) argues that if females are tested in a non-achievement situation, they do reveal achievement motivation; but if they are tested in achievement oriented situation, their scores on achievement motivation scale dramatically decreases; while, on the contrary, males generally reveal high level of achievement motivation in achievement conditions and vice-versa.

Citing the finding of Dweck and Dweck (1975) , Bernstein et al. (1991) came up with partly similar argument that females can show the pattern of achievement motivation similar to that of males in both achievement and non-achievement situations but behave variably. For instance , according to Bernstein et al.(1991), highly motivated females, unlike males with equal level of achievement motivation, do not establish challenging goals for themselves when given a chance and they do not persist when facing failure. In a related manner, other researchers (e.g., Torki, 1975; Matters,1977; Hermans, 1970) reported non-significant differences between males and females in achievement motivation.

On the other hand, Weiner (1992) argues that females do not at all show any change in the level of their achievement motivation in both achievement and non-achievement situations while males are motivated in achievement-oriented situations but less motivated in non-achievement situations.

Concerning the relationship between achievement motivation and academic achievement in males and females, majority of the studies on this issue reported

consistent positive relationship between the two variables in males, while such consistent relationship was not found for females. That is, males with high achievement motivation are, most of the time, associated with high level of academic performance while such pattern is absent for females.

For example, after reviewing studies by Sear (1962 & 1963) on achievement motivation of elementary school children, Hoffman (1972) reported that achievement motivation in boys was positively related to achievement test score, while in girls such relationship was not observed.

As cited by Zenawi (1997), O'reary and his associates reviewed the studies by Vroff and Feld. According to Zenawi's report, the authors observed that males with high achievement motivation performed faster and more competently than males with low achievement motivation. But no such relation was obtained for females. In a related study, Crandall et al. (1962) underscored that boys who stated expectancy of intellectual success were, in general, positively associated with their intellectual achievement efforts while the expectation of girls were not significantly related to their intellectual behavior.

### **2.3. Future Time Orientation**

According to Lamm et al. (1976), future time orientation has two aspects: cognitive and feeling (motivational and affective) aspects. The cognitive aspect of future time orientation deals with arranging and structuring of future events that lead to the need satisfying goal perceived in the vague distant future (Gjesme, 1980).

According to Nuttin (1964), person's perception and concern about future time in a given situation is initiated by unfulfilled needs. This need experience implies a dynamic relationship toward something absent, something which is still to come, something different, even something new (Gjesme, 1980). This again, according to Gjesme (1980), implies that people are vaguely oriented toward the object they need. To

arrive at this needed goal which is vaguely seen in the distant future, a person needs to have capacity, willpower and patience in designing, structuring, and timing events to accomplish them step by step. Therefore, a well adapted, structured, coherent, and extended future time orientation is the characteristic of persons who are associated with high achievement in achievement oriented activities (Wallace & Rabin, 1960).

The other aspect of future time orientation is motivational and affective feeling. As indicated by Nuttin (1969), human motives are directed towards goals which may be attained in near or distant future. These goals may be to achieve certain ends, and to satisfy certain needs and wishes or they may be directed in avoiding certain fears and undersired events.

Hence, if a person believes that his present action will result in an outcome that will satisfy his needs in the future, he is likely to be motivated to perform achievement oriented activities (Nuttin, 1964 ; Devolder & Lens, 1982). Such a person is likely to think about the future and to anticipate it optimistically, spend most of his/her time on doing things, perform better to achieve higher in achievement situation. On the other hand, if a person believes that his present action leads him/her to failure, he/she is likely to avoid the activities that involve achievement, and as a result he/she is likely to perform poorly in achievement situation.(Gjesme, 1979).

### **2.3.1. Future Time Orientation and Academic Achievement**

Several studies came up with results that revealed positive relationship between future time orientation and academic achievement. For example, Devolder and Lens (1982) studied the relation of future time orientation to academic achievement and study persistence in high school students. Future time was divided in to distant future, near future, and open present. At the end of their study, Devolder and Lens have reported that students with high grade point average (GPA) and high study persistence have attached higher valence to distant future goal. The researchers have also observed that such

students have perceived studying hard as more instrumental for reaching goal in the distant future and in the open present than those with low GPA and low study persistence. From this finding they concluded that when students value distant future goal and study hard for reaching the goal, they will be more persistent in their daily study and obtain better academic results. Similarly in his study on university students, Roynor (1970) has found that students with high perceived instrumentality of immediate success (grade) to reach long future goal were positively associated with higher academic achievement. In support of these results, Devolder and Lens (1985) have cited several studies which revealed positive relationship between long future time orientation and academic achievement (David & Sidman, 1958; Epley & Ricks, 1963; Goldrich, 1967; Klineberg, 1967; Lessing, 1968; Teahan, 1958; Rincent & Tyer, 1965).

On the basis of the finding of a study by Sharable and Moulton (1965) on high school students, Roynor (1969) also reported that those students with higher level of intelligence have clearly revealed their concerns over achieving distant future goal. However, the results were reversed for those students with lower level of intelligence.

In another study on high school students, Wolf and Savickas (1985) found that more adaptive time perspective is positively related to academic achievement.

Contrary to the above results, there are also studies which have demonstrated non-significant relationship between future time orientation and academic achievement. As cited by Gjesme (1970), the studies by Sienman (1958), Doob (1963); and Krauss et al. (1967) are the examples of studies which have shown non-significant relationship between the two variables.

### **2.3.2. Sex Differences in Future Time Orientation**

Research results which portrayed significant differences in future time orientation between male and female students were reported by different researchers. For example,

Lamm et al. (1976) studied the relation of future time orientation to sex and social class. In their study, Lamm and his associates found that lower class boys had a more extended future orientation than had low class girls. Based on the finding of a study by Lessing (1968), Gjesme (1979) also pointed out that boys are more future oriented than girls. Contrary to these results, Lens (1975) has found girls to express more optimistic views about their future than did boys. In some other studies (e.g., Chandler, 1979; Dessalegn, 1993) non-significant differences in total scores of future time orientation between the two sex groups were demonstrated.

Regarding the relationship between future time orientation and academic achievement in males and females, Gjesme (1979) has cited one study by Brandenburg (1971) which has demonstrated small positive correlation between Scholastic Aptitude Test (SAT) and future time orientation density for females, not for males.

considered, and on the fact that they were used in several research works (see section 3.5 for detail).

The data were collected by administering the instruments to the subjects in a group. This way of collecting data is advantageous as it provides the subjects with full privacy; and hence elicits more reliable information than do other methods such as interview (Shertzer & Stone, 1980 )

### **3.1. Subjects**

The target population of this study was regular students (males and females) of high schools in Arsi Zone. There are 13 high schools in the Zone. Out of these schools (excluding one school-Bekoji-because it was used for pilot study), five (Chilalo, Huruta, Qersa, Sire, and Arboye) were selected by the stratified random sampling. The grade levels covered by the study were 10,11, and 12, with ages ranging from 17-20. Grade 9 students were excluded because they had no high school academic achievement scores of three semesters as this grade level is the beginning of high school.

According to the statistical data obtained from the Arsi Zone Education Department, there were 3764 students enrolled in these five schools in the 1997/8 academic year. Out of this population, 414 students (207 males and 207 females) were sampled. However, from the sampled students, 45 couldn't fill all the three scales properly, 20 were absent and 2 were sick during the administration of the scales, and for 44 other students it was not possible to get full document on the academic achievement. Totally, 111 subjects were excluded from the study, and the data analysis was made on the basis of information secured from 303 students.

High school students were selected to be the subjects of this study because the results of the earlier studies (e.g., Tekeste, 1995; Assefa, 1991; Tsion & Wana, 1996) have revealed that poor academic performance and repetition rate of students in a class is

intensified at this educational level in Ethiopia. Arsi Zone was selected for this study on the basis of researcher's practical knowledge and the information he has got from many high school teachers and authorities that the issue of poor academic performance and high repetition rate of students (particularly that of girls) is the major problem of the educational process in the zone. Moreover, this zone is the researcher's prospective place of work, and hence it would be convenient for him to make follow-up studies on the issue.

### 3.2. Sampling

As indicated earlier, the 414 sample subjects were selected by the use of stratified multi-stage random sampling method. This was done as follows. First, the 12 high schools (with the exclusion of one for pilot study) in the zone were stratified into four groups (see Table 1) on the basis of their student population, and then, by the use of proportional allocation, the number of schools to be selected from each stratum was determined. This was done because there was a great disparity (as one can see from Table 1) among the schools in the size of student population. Then, as pointed out earlier, five sample schools were selected from each stratum using simple random sampling.

**Table 1 Strata of the 12 high school with their student population in 1997/8**

Schools	Number of students
Asella Comp. S.School	2394
Chilalot Terara S.School	2092
Arbegnochi S.School	864
Dide'a S.School	739
Huruta S.School	711
Kofele S.School	581
Qersa S.School	432
Asasa S.School	393
Amigna S.School	299
Sire S.School	284
Ticho S.School	277
Arboye S.School	245

Source: Arsi Education Dept. Statistics Section .

Then, in each sampled school, the number of students to be selected from each grade level was determined by proportional allocation. Furthermore, each grade level in each school was stratified into sections and the number of students to be selected from each section was determined by the proportional allocation method. Finally, simple random sampling method was used to select the needed number of sample students from each section (equal number of males and females). The number of males and females was made equal for the convenience of statistical treatment.

### **3.3. Data Collection**

The three adapted tests were administered to the selected sample students in each sampled school during their regular school time by the researcher and employed assistants. The selected students were taken from each section of the selected grade levels by the help of unit leaders and directors. In each school, all the three instruments were administered at the same time (in one session) . All the necessary clarifications were made to the subjects in addition to the instructions given on the first pages of the instruments.

With regard to academic achievement, average academic achievement scores of three consecutive semesters were obtained from record offices in each sampled school. Only the subjects who filled all the three scales properly, and those whose academic achievement scores were available were considered.

### **3.4. Variables Considered**

#### **Dependent Variable**

Academic Achievement. This variable was symbolized by Y. It is a continuous variable obtained from the average score on all subjects offered at each selected grade level.

## **Independent Variables**

Out of several psychological variables, locus of control, achievement motivation, and future time orientation were selected in this study because literature and research results have repeatedly shown (page 9-19 ) that these variables influence academic performance of students strongly.

1. Locus of Control. This variable was represented by  $X_1$ , and based on the subjects' responses to the used scale, it is dichotomized into internal or external,
2. Achievement Motivation. This variable was represented by  $X_2$ , and on the basis of subjects' reaction to the used questionnaire, it is classified into high or low
3. Future Time Orientation: was symbolized by  $X_3$ . This variable is subcategorized in high or low according to the responses of the respondents.
4. Sex: is dichotomized into male and female. 1 represents male whereas 0 stands for female.

### **3.5. Instruments**

As mentioned earlier, the three instruments used to gather data on the variables under investigation were CNSIE scale, PMT questionnaire , and FTO scale (see Appendices A-C). All of the instruments were translated into Amharic by a language expert at the Department of English in Addis Ababa University (AAU). Then, the translated tests were given to other three MA students majoring in English to see the agreement of their opinion on the appropriateness of the translation. This was done by rating the translation of each item as "appropriate" or "inappropriate" after

comparing the English version and its corresponding translated (Amharic) version. The result of the rating demonstrated that 83% of the items were agreed upon by the three judges for the appropriateness of their translations. The translations of the items upon which the experts did not agree were improved through the discussion made with the judges. Finally, the translated instruments were given to a language expert at the Department of Amharic in AAU to ensure the clarity of the language.

### **3.5.1. Measure of Locus of Control**

Children's Nowicki Strickland Internal-External (Nowicki and Strickland 1973) scale was used to collect data on locus of control. The selection of this scale was based on the justifications given by scholars (e.g., Clifford & Cleary, 1972; Chandler & Dugovisky, 1977) that it is a proper measure of locus of control. This instrument has also been used in several research works (e.g., Cole & Sapp, 1988; Nowicki et al., 1978; Nowicki & Strickland, 1973; Finch & Nelson, 1974; Nowick & Duke, 1974). The instrument includes items measuring internal and external expectation of a person (Nowicki & Strickland, 1973). The items are Yes/No questions and the respondents were supposed to answer the questions by circling letter A (for Yes) and B (for No) given under the headings YES and NO columns. The items were scored by assigning 1 point to the responses reflecting external belief and zero (0) to the responses reflecting internal belief. Hence, the higher the score the more external a subject was and vice versa. As a result, negative values of this variable indicate positive relations/predictions.

Nowicki and Strickland (1973) have found the reliability of this instrument to be .74 for grade 9, 10 and 11, but .71 for grade 12 by using split-half method. With regard to the validity of the instrument, the authors have reported its discriminant validity in that it has no significant correlation with social desirability bias (Nowicki & Strickland, 1973).

The scale is composed of 40 items, as developed originally by the authors. However, 4 items were excluded from this study for the reason that two items (items: 28,38) do overlap with items of future time orientation, two items (items:21,5) were discarded because of their cultural bias. This was done after consulting three experts in the department of psychology. So, 36 items were used for the collection of data on locus of control.

### **3.5.2. Achievement Motivation Measure**

Achievement motivation measure (Prestatie Motivatie Testie) developed by Hermans (1970) was used to measure achievement motivation. This questionnaire was selected on the basis of witnesses given by different researchers (e.g., Wotruba & Price, 1975; in Chandler et al., 1979; Schultz & Pomerantz, 1974) to its appropriateness for measuring achievement motivation. Moreover, the instrument has been used in several research works (e.g., Chandler et al., 1979; Reynold, 1976; Schultz and Pomerantz, 1974). The items cover important aspects of achievement motivation (e.g., level of aspiration, risk taking behavior, upward mobility, persistence, task tension, partner choice, recognition behavior, and achievement behavior ) described by Atkinson, (1958) and Hermans (1970).

The items are multiple choice questions, and the respondents were instructed to circle one of the given choices. The choices were arranged in a decreasing or increasing order of achievement motivation level (weight they carry). For example, in the first case, choice A was given 4 points if its stem was followed by 4 choices, and in the same manner B,C, and D were given 3,2, and 1 respectively. If the choices were arranged in increasing order, then scoring was reversed. The total score of each subject was the sum of the weights given to the choices of each item.

With regard to the reliability of the questionnaire, Herman (1970) has reported K-R20 value of .88 in achievement situations. The instrument has also better discriminant

(Chandler et al., 1979) and predictive (Shultz and Pomerantz, 1974) validities than other measure of achievement motivation such as TAT.

The questionnaire consists of 29 items. Out of these, 6 items (items: 71,73, 75, 9, 76, 54) overlap with items of future time orientation and one (item 88) is gender biased. Hence 7 items were excluded and the remaining 22 items were used for data collection.

### **3.5.3. Measure of Future Time Orientation**

The scale developed by Gjesme (1979) was used in this study to gather data on future time orientation. It is composed of 14 items (proposed statements). All of them were considered. The selection of this scale was based on the evidence given by the author of its appropriateness to measure future time orientation. That is, using factor analysis, Gjesme (1979) has identified the items measuring general concern, engagement, involvement in the future and ability of clearly structuring the future events. This instrument has also been used in different research works (e.g., Gjesme, 1970; Habtamu, 1986).

The instrument is four point scale and the points are designated as: “very true of me”= 4 points , “true of me” = 3 points, “fairly true of me”= 2 points, “ not at all true of me” =1 point. The subjects were instructed to put (✓) mark in one of the columns given under each title on the basis of their choices. Out of 14 items, 11 are negatively stated. The negatively stated items were scored in a reverse direction. Then the given points (weights) were summed to get the total score of a subject.

The reliability of the scale, as reported by the author, is .62 in terms of alpha coefficient (Crombach, 1957). The correlation between item score and total score test correlation ranges from .26-.52.

### 3.5.4 Pilot Study

Though the selected instruments have already been standardized, and their reliability and validity have been established by their respective authors, the time, environment and situation under which they were standardized were different from the environment, and situation here in Ethiopia. Hence, pilot study was believed to be important to check the reliability of the instrument in Ethiopian context. Bekoji high school (in Arsi Zone) was selected for the pilot test. The scales were administered to 80 sampled students during their regular school time.

According to the result of the pilot study, the reliabilities of the locus of control scale, achievement motivation questionnaire, and future time orientation scale were .82 (by split-half method), .78 (by K.R20), and .64 (by Cronbach alpha) respectively (see Appendices D-F for detail calculations). As shown above, the reliability value of achievement motivation questionnaire, is considerably lower than that found by the author. This might be because of the environmental and cultural differences under which the group of standardization and the present group were tested. However, as the present value is within the range of reliability values (.60 and above) which are considered by Nunally (1967), cited in Belay (1996), to be dependable for personality tests, its appropriateness for measuring achievement motivation in the present group was taken for granted.

### 3.6. Methods of Data Analysis

1. Descriptive Statistical measures - mean and standard deviation - were used to see general pattern of academic achievement of the subjects in subcategories of locus of control, achievement motivation, future time orientation, and sex
2. To see the combined and relative contribution of the above variables to the prediction of academic achievement of the sampled students, multiple regression analysis was employed .

3. To examine the significance of differences in academic performance between males and females similar in the state of independent variables (locus of control, achievement motivation, and future time orientation), differences in these variables between the two sex groups, and beta weights, t-test was employed.
4. To see the degree of association between the academic achievement and these independent variables in male and in female students, Pearson's product-moment correlation was employed. Then, z-test for correlation differences was employed to see whether the correlation coefficients are significantly different between the two sex groups.
5. Depending on the significance of the Pearson's correlation coefficients, multiple regression analysis was used to examine the combined and relative contributions of the independent variables to the prediction of academic achievement of each sex group.
6. Finally, all the differences were tested for statistical significance at the .05 level.

## CHAPTER FOUR

### 4. RESULTS

In this section, the results obtained from the employed statistical methods are presented in tables followed by verbal descriptions. First, result of descriptive statistics are presented. Then the results about combined and relative contributions of the independent variables (locus of control, achievement motivation, future time orientation and sex) to academic achievement, comparison of achievement mean score differences between sexes having similar state of the independent variables (locus of control, achievement motivation, and future time orientation), sex differences in these independent variables, relations of these variables to the academic achievement of male and female students, and their joint and relative contributions to the prediction of the academic achievement of female students are presented in the given order.

#### **4.1. Academic Achievement Mean Scores and Standard Deviations of Subjects in Subcategories of the Independent Variables.**

These measures of descriptive statistics were believed to give an overview of general pattern of academic achievement of the subjects in each subcategory of each independent variable. Table 2 presents these measures.

**Table 2 Academic Achievement Means and Standard Deviations**

Variables	Categories	N	$\bar{X}$	Standard Deviations
Locus of Control	Internal	151	61.19	9.67
	External	152	58.09	7.43
	Total	303		
Achievement motivation	High	152	59.86	9.06
	Low	151	59.41	8.44
	Total	303		
Future time orientation	High	152	61.08	8.89
	Low	151	58.18	8.38
	Total	303		
Sex	Male	157	62.87	9.13
	Female	146	56.16	6.79
	Total	303		

As indicated in Table 2, students with internal locus of control, those with high achievement motivation, and future time orientation are apparently associated with higher academic achievement mean scores than the students who are external in locus of control, those who are low in achievement motivation, and those who are low in future time orientation respectively. Moreover, it is shown that high school male students are higher than their female counterparts in academic achievement mean score. In terms of standard deviations, all subgroups with higher academic achievement mean scores are more variable than those with lower mean scores. But, are these differences high enough to show significant influences of the independent variables on academic achievement of the target students? This question will be answered in the following sections.

## 4.2. Contributions of the Independent Variables to the Prediction of Academic Achievements of Students.

One of the questions of this study was whether locus of control, achievement motivation, future time orientation, and sex have significant joint and relative contributions to the prediction of the academic achievements of high school students. Multiple regression analysis was employed to answer this question, and the obtained results are presented in the following two subsections.

### 4.2.1. Joint Contribution

Table 3 presents a summary of the regression analysis indicating joint contribution of the independent variables to the prediction of the students' academic achievement.

**Table 3. Summary of Regression Analysis**

Source of Variation	Df	SS	MS	F	P	R <sup>2</sup>
Regression	4	4205.16619	1051.29155	16.58876	.05	18%
Residual	298	18885.36642	63.37371			

According to the results in Table 3, locus of control, achievement motivation, future time orientation, and sex have significant joint contribution to the prediction of high school students' academic achievement. ( $F_{4, 298}=3.84$ ). They are accountable for 18% of the variance in academic achievement of the target group.

### 4.2.2. Relative Contribution

Now, what are the relative contributions of locus of control, achievement motivation, future time orientation, and sex to the prediction of the academic

achievement? Beta weight was calculated for each variable to answer this question, and Table 4 presents the results.

**Table 4** Calculated Beta Weights and t-test

Variables	B	SEB	Beta	t	p
Locus of control	-.229675	.130801	-.099013	-1.756	>.05
Achievement Motivation	.003697	.060336	.003424	.061	>.05
Future time orientation	.207081	.088649	-.131743	2.336	<.05
Sex	6.502592	.919687	.372198	7.070	<.05
Constant	50.780356	6.184793		8.211	<.05

N.B. The negative beta values for locus of control indicates a positive relationship.

The computation of beta weight for each variable (Table 4) has shown that sex, locus of control, future time orientation and achievement motivation have beta values of 6.502592, -.229675, .207081, and .003697 respectively. As can be seen from these results, sex has the highest magnitude of beta weight, while achievement motivation has the lowest beta value.

The main question to be answered yet was whether these values are statistically significant to predict academic achievement of the target group or not. As demonstrated by t-test (Table 4), only sex and future time orientation were found to have significant beta weights ( $t_{301} = 1.96$ ,  $P < .05$ ). The beta value of locus of control and that of achievement motivation were not significant. The failure of beta weight of locus of control to reach the level of significance, despite its higher magnitude than that of future time orientation, is due to higher standard error associated with it (Table 4). The magnitude of standardized beta weights, which indicates the actual contribution of each independent variable, also shows the same pattern indicated by calculated t-values.

Regression Equation for prediction

$$Y = 50.7804 - .2297 X_1 + .0037 X_2 + .2071 X_3 + 6.5026 X_4$$

Where,

Y = predicted academic achievement

X<sub>1</sub> = Locus of control

X<sub>2</sub> = Achievement motivation

X<sub>3</sub> = future time orientation

X<sub>4</sub> = Sex.

### 4.3. Differences in Academic Achievement Mean scores between sexes having similar state of the Independent Variables

As demonstrated by the regression analysis, the variable sex is the strongest predictor of the academic achievement of high school students in that males are found to be superior to females in their academic performance. But, will this difference be affected by keeping of locus of control, achievement motivation and future time orientation constant? Independent t-tests were done for the significance of differences in academic achievement mean scores between sexes with similar state in the independent variables (e.g., internal males vs internal females) to assess this assertion. The results of the t-tests are presented in Table 5.

**Table 5. Academic Achievement Mean Scores of Males and Females in Similar in the state of Independent variables**

Statistics	Locus of Control				Achievement Motivation				Future time orientation			
	Internal		External		High		Low		High		Low	
	M	F	M	F	M	F	M	F	M	F	M	F
n	84	67	73	79	70	73	78	73	79	73	78	73
Mean	64.03	57.64	61.54	54.90	62.55	56.94	63.19	55.38	63.07	58.07	61.86	54.25
S.D.	9.76	8.35	8.22	4.81	9.46	7.67	8.84	5.72	9.47	7.15	8.73	5.85
tcal	4.33		6.02		4.03		6.50		4.28		6.33	
P	.00		.00		.00		.00		.00		.00	

As indicated in Table 5, t-test has proved that in all the subcategories of independent variables, the academic performance of male students is significantly higher than that of female students who are in the same subcategories. That is, male students with internal locus of control, those with high achievement motivation, and those with high future time orientation are significantly higher in their academic achievement mean scores than the female students with similar level of the traits. Similarly, male students with external locus of control, those with low achievement motivation and those with low future time orientation have higher mean scores in academic achievement than their female counterparts.

#### **4.4 Sex Differences in the Independent Variables**

It is clear from the foregoing analyses that high school male students are considerably superior to their female counterparts in academic achievement. This may lead one to ask whether the observed discrepancy could be attributed to superiority of the male students to the female group in their status of locus of control, achievement motivation, and future time orientation. t-tests were performed to examine this fact, the results of which are presented in Table 6.

**Table 6. t-test for the Differences between Male and Female Students in terms of the Independent variables.**

Measure/Sex	n	means	S.D.	t <sub>cal</sub>	t <sub>sig</sub>
Locus of control					
males	157	10.0127	3.774	1.54	.125
Female	146	10.6780	3.747		
Achievement					
Motivation					
Males	157	84.8080	8.791	.28	.780
Females	146	85.0685	7.309		
Future time					
Orientation					
Males	157	39.6051	5.50	.42	.675
female	146	39.3356	5.644		

- t<sub>cal</sub> = t-calculated, t<sub>sig</sub> = t-significant, n = number of cases

Data in Table 6 indicate that there is no statistically significant differences between male and female students in terms of the mean scores of all the three independent variables. That is, male and female students do not significantly differ in their mean scores of locus of control, achievement motivation, and future time orientation.

#### **4.5. Relations of the Independent Variables to Academic Achievement in Male and Female Students**

Another question to be answered in this study was whether these independent variables are significantly associated with the academic achievement of male & female

students, and whether there is significant differences in magnitudes of associations between the two sexes. Product-moment correlations between academic achievement and the independent variables were calculated separately for male and female students to assess this issue. The correlation matrix in Table 7 presents the correlation coefficients for both sex groups.

**Table 7. Correlation Matrix**

Variable	Y	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>
Y	1.0000	-.2791	.1283	.3053*
X <sub>1</sub>	-.0624	1.0000	-.2664*	-.4478*
X <sub>2</sub>	.0312	-.2822	1.0000	.2379
X <sub>3</sub>	.0846	-.1659*	.3282*	1.0000

As shown in the table, for the female students, the correlations of academic achievement with future time orientation ( $r_{144} = .305$ ,  $P < .05$ ) and that with locus of control ( $r_{144} = -.2791$ ,  $p < .05$ ) are statistically significant while that with achievement motivation is not. Furthermore, a close observation of the magnitudes show that academic achievement is correlated the most with future time orientation, and to a lesser extent with locus of control, and the least with achievement motivation.

In the case of male students, academic achievement is related significantly to none of the three independent variables but with the same pattern of relationship observed in the female group. Moreover, the magnitude of correlation of academic achievement with each independent variable is higher in female students than in the male ones. However, it was necessary to test whether these differences were statistically significant or not. Hence, correlation difference test was performed (see Appendix G, i-iii), and it was found that the observed differences are significant for the correlation of academic achievement with locus of control and for that with future time orientation. But the difference is not significant for the correlation of academic achievement with achievement motivation.

#### 4.6. Contributions of the Independent Variables to the Prediction of Academic Achievement of Female Students

As has already been shown (Table 7), locus of control and future time orientation are significantly related to the academic achievement of female students . But are these relations strong enough to enable one to predict the academic achievement of this sex group from these independent variables ? Mutiple regression analysis was conducted to answer this question. The results are presented in Table 8 and 9.

##### 4.6.1. Joint Contribution

**Table 8. Summary of the Regression Analysis for Females**

Source of variation	DF	SS	MS	F	P	$R^2_{y,123}$
Regression	3	797.04801	265.68267	6.41692	<.05	10%
Residual	142	5879.29466	41.40348			

As indicated in Table 8, locus of control achievement motivation and future time orientation, in combination, do significantly contribute to the prediction of the academic performance of high school female students. 10% of the variance in the academic performance of this group is accounted for by these variables.

##### 4.6.2. Relative Contribution

The relative contribution of these independent variables to the prediction of academic achievement of female students was another point to be examined. In doing this, beta weight was calculated for each variable. t-test was also performed to see the significance of each beta value. Table 9 presents the results.

\* Male students were excluded from the analysis because none of the three variables has significant correlation with the academic achievement of this group.

\* Achievement motivation was considered to see the magnitude of its beta weight in relation to other two variables.

**Table 9. Beta Weights and t-tests.**

Variable	B	SEB	Beta	t	p
Locus of Control	-.311731	.162268	-.172142	-1.921	>.05
Achievement Motivation	.027673	.076583	.029807	.361	>.05
Future Time Orientation	.265869	.106910	.221132	2.487	<.05
(Constant)	46.675484	8.124988		5.745	<.05

The result of the calculation (Table 9) shows that beta values for locus of control, future time orientation and achievement motivation are -.311731, .26869, and .027673 respectively. The magnitudes of these figures portray that locus of control has higher beta value than future time orientation. However, the t-test demonstrated the reverse of what these figures show. According to the result of the t-test, the beta weight of future time orientation has managed to be statistically significant ( $t_{144}=1.96$ ,  $P<.05$ ) while the beta value of locus of control could not reach the level of significance. This has happened due to the higher standard error (see Table 9) associated with locus of control. This result is the same as what was found for the two sex groups in combination (see Table 4)

#### Regression Equation for Prediction

$$Y = 46.6755 - .3117 X_1 + .0277 X_2 + .2659 X_3$$

Where,

Y = Predicted academic achievement

$X_1$  = Locus of control

$X_2$  = Achievement motivation

$X_3$  = Future time orientation.

## CHAPTER FIVE

### 5. DISCUSSION, SUMMARY, CONCLUSIONS AND IMPLICATIONS

#### 5.1. Discussion

In this section the results reported in chapter 4 are interpreted and discussed in the light of the purposes of this study. Accordingly, the results on the combined and relative contributions of locus of control, achievement motivation, future time orientation, and sex to the prediction of academic achievement are first discussed. This is followed by discussion of the findings concerning sex differences in the independent variables under consideration. Then, the results about the relations of the independent variables to the academic achievement in each sex group, and their joint and relative contribution to the prediction of the same variable is discussed.

#### 5.1.1. Locus of Control, Achievement Motivation, Future Time Orientation and Sex as predictors of Academic Achievement

As revealed by the multiple regression analysis (Table 3), locus of control, achievement motivation, future time orientation, and sex have significant joint contribution to the prediction of high school students' academic achievement ( $F_{4,298}=3.84, p<.05$ ). Moreover, the multiple regression has made clear that these variables are accountable for 18% of the variance in the academic achievement of high school students. Furthermore, analysis of beta weights (Table 4), to see the contribution of each independent variable to the prediction of academic achievement, has also provided the following results.

#### **5.1.1.1. Locus of Control and Academic Achievement.**

The independent t-tests of beta weights have revealed that locus of control by itself has no statistically significant contribution to the prediction of the academic achievement of high school students ( $t_{301} = 1.96, p > .05$ ). This shows that the observed academic achievement mean scores difference between internal and external students (Table 2) is not high enough to enable one to predict the academic achievement of the target group. The result suggests that high and low achieving students are nearly similar in the state of locus of control, and as a result it is unlikely to differentiate between high and low achieving students on the basis of locus of control scores. This implies that locus of control has no significant influence on the academic performance of low achieving high school students, and hence, it is unlikely to bring significant change in academic achievement by improving internality of these students. In other words, significantly observable improvement in academic achievement is unlikely to be brought about by improving internality of low achieving high school students. This result goes in line with the findings of some researchers (e.g., Cole and Sapp, 1988; Edward and Waters, 1981) who, using regression technique, came up with the result that locus of control is poor predictor of academic achievement of high school students.

However, the result is inconsistent with the theoretical reasoning that locus of control is positively related to achievement (Rotter, 1966), and also contradicts the general trend of the research findings of several researchers (e.g.; Bar- Tal et al., 1980; Loa , 1980; Kishor, 1983; Crandal et al., 1965; Belay, 1996) who reported that locus of control is a significant predictor of high school students' academic achievement.

This contradiction between the result of the present study and the established theoretical conceptualization of locus of control could be explained by several factors. One explanation could be the defensive externality, the factor that was conceived by Rotter (1966) as confounding the results of researches on locus control. According to Rotter (1966), defensive external is a notion that an external locus of control may be

Rotter (1966), defensive external is a notion that an external locus of control may be adopted as anxiety reducing measure. That is, in attributing reinforcement to forces outside him/herself, an individual is freed from the responsibility for outcomes of his/her own behavior and is thus relieved of personal threat that those outcomes may bring undesired consequences (Prociuk and Breen, 1975). Citing Horner (1970) and Thurber (1972), Prociuk and Breen (1975) have indicated that such phenomenon is common among many high achieving students in a competitive academic environment. That is, in a competitive academic environment, many academically successful students fear that their present success may be followed by failure some time in the future. This could again be a source of anxiety to several competent students. Consequently, many of them begin to defend themselves against this anxiety by attributing the outcomes of their behavior to external forces such as powerful others whenever they are asked to explain the source of the outcomes.

Hence, from this reasoning it seems that many of the high achieving subjects involved in the present study, who are in stiff competitions to attain the highly increased cutpoints in ESLCE results for joining higher education or other training programs such as T.T.I., might have been filled with fear that they may not get through this competition. As a result they might have resorted to defensive externality, and hence have responded to the used CNSIE scale defensively. Shortly, the fear of negative consequence might have confounded the result of this study. Such possibility could be attributed to the methodology of this research in which Internal, Powerful Others and the Chance (IPOC) scale, developed by Levenson (1972) was not used to identify defensive externals.

Another possible explanation for the incompatibility of the result of this study with the theoretical reasonings about the construct locus of control may pertain to the validity of the used scale. It was repeatedly underlined by researchers and critics (e.g., Loo, 1979) that Internal External (IE) scales, including CNSIE, suffer from social desirability bias. That is, items in IE scales reflect ideas and personal qualities that are evaluated by society positively or negatively. As a result subjects may respond to items reflecting behavior that are negatively evaluated by the society in socially desirable ways.

Such possibility might have confounded the present result. Though Loo (1979) has strongly recommended the use of social desirability scales in any research dealing with locus of control, this scale was not used in the present research relying on the finding by Nowicki and Strickland (1973) that CNSIE scale is the least in social desirability bias. However, since desirability of a scale can be altered according to a particular culture (Mehren and Lehmen, 1969), CNSIE scale might have introduced this bias to the present research in the Ethiopian situation.

Other factors such as age, grade level, family background, and school situation-which were not considered in this study might also explain this result.

#### **5.1.1.2. Achievement Motivation and Academic Achievement**

Despite the academic achievement mean score of achievement oriented students is slightly higher than that of the opposite group (Table 2), the t-test of beta weights (Table 4) revealed that the variable achievement motivation has no statistically significant contribution to the prediction of academic performance of high schools students. This indicates that high and low achieving students in high schools are almost similar in the level of their achievement motivation, and hence it is unlikely to judge the students' academic performance from the level of their achievement motivation. This result suggests that achievement motivation does not significantly contribute to the poor academic achievement of low achieving high school students. This again gives an impression that it is not likely to bring about a significant improvement in the academic achievement of low achieving high school students by improving their achievement motivation.

This finding is inconsistent with the findings of several researchers (e.g., Loa, 1980; Matter, 1977; Zenawi, 1997; Daniel 1992; Epps, 1969) which revealed that achievement motivation does significantly predict academic achievement of high school students. On top of this, the finding contradicts the theoretical assertion that achievement

motivation is a significant predictor of achievement ( Atkinson, 1958).

One reason for the incompatibility of the present result with the previous findings and theoretical assertion might be the time of data collection. The data for this study were collected during the first semester final examinations in high schools. It was at the period when all students were anxiously preparing for the examinations. Moreover, it was the time when teachers and school leaders strictly agitate and warn students to study hard in order to attain good scores and pass the examinations. As a result, every student might have been motivated equally to achieve better and pass the examination, and hence might have responded to the used questionnaire in a similar manner irrespective of his/her academic ability. This argument is based on the fact that achievement motivation can be influenced by external (environmental) situations (Klein, 1985).

Another explanation for the outcome of the present study might be related to the validity of the measuring instrument used. Though *Prestatie Motivatie Testie* (PMT) is praised as an objective measure of achievement motivation (Shultz & Pomerantz, 1974), it is, at the same time, criticized for its social desirability (Reynold, 1976). According to Reynold (1976), more than half of the items of this questionnaire invite subjects to respond in a socially acceptable way regardless of their ability. Similarly, the low achieving subjects involved in this study might have responded to the majority of the items of this questionnaire in a socially desirable manner, and, as a result, they might have scored in the used questionnaire as high as the academically high achieving subjects.

The type of the items of the used questionnaire and the procedure of administration may also explain the result of the present study. The PMT is composed of multiple choice (Appendix B) with 4-6 alternatives. Besides, all the three used instruments (with total of 72 items ) were administered to the subjects at the same time because of the constraints of time and space of administration. Therefore, it seems that the sampled subjects who were anxiously looking forward to the approaching examinations might have been bored to read the list of alternatives following each item of the questionnaire,

which was coupled with other two scales, and as a result they might have randomly filled the questionnaire.

The aforementioned extraneous factors (age, grade level, family background, school situations) might also be responsible for this result.

### **5.1.1.3. Future Time Orientation and Academic Achievement.**

As has been confirmed by its statistically significant beta weight (Table 4), the variable future time orientation has a significant positive contribution to the prediction of high school students' academic achievement. According to this result, those high school students who are high in future time orientation do significantly outperform those who are low in the trait. This indicates that one can differentiate between high and low achieving high school students on the basis of the level of their future time orientation. This again suggests that future time orientation has significant influence on academic achievement of high school students, and thus, significant improvement in academic achievement is likely to be brought about by improving future time orientation in low achieving high school students.

The result goes in line with previous empirical research findings of several researchers (e.g., Devolder & Lens, 1982; Wolf & Savickas, 1985; Dessalegn, 1983) who found future time orientation to be significant predictor of academic achievement in that students high in this trait were significantly associated with better academic performance than were those with low in the trait.

On top of this, the result is consistent with the theoretical conceptualization of future time orientation that this variable is a significant predictor of high achievement. That is, it is theoretically established that if a person is high in future time orientation, he is likely to achieve high in achievement situation. As underlined by several theorists (e.g., Wallace & Rabin, 1960; Gjesme, 1980; Nuttin, 1964; Devolder & Lens, 1982),

future oriented individuals are characterized by arranging, structuring and performing future events coherently. This theoretical reasoning might be true with the high school students who are high in future time orientation.

However, this result contradicts the findings of other researchers (Seiman, 1958; Doob, 1963; Krass et al., 1967), cited in Gesme (1979). As reported by Gjesme (1979), the above investigators came up with the findings that future time orientation does not significantly predict academic achievement of students. These contradictions may be related to the long time interval between the present study and the previous ones, which might have resulted in methodological and cultural changes.

#### **5.1.1.4. Sex and Academic Achievement**

The analysis of beta weights (Table 4) revealed that, of the independent variables under consideration, sex is the strongest predictor of high school students' academic achievement. That is, it is clearly shown that high school male students are considerably higher than female students in their academic achievements. Even after keeping other independent variables constant (Table 4), this pattern was not significantly affected; male students remained superior to their female counterparts in their academic achievement mean scores. So, the result suggests that sex is a factor that considerably influences the academic performance of high school students in that females are inferior to their male counterparts in the same dependent variable.

The result of this study reflects the present trend observed by several researchers (Genet & Barbara, 1991; Assefa, 1991; Tsion & Wana, 1994; Tsion, 1993; Daniel 1992; Zenawi, 1997; Belay, 1996; Dessallegn, 1993) that females are more associated with poor academic performance than their male counterparts in Ethiopian education.

Several factors may explain as to why female students' academic performance is consistently inferior to that of male students in Ethiopia. Insignificant value given to

female competence could be one of the factors that negatively influence the academic performance of Ethiopian female students. It was repeatedly underlined (Almaze & Barbara, 1990; Tsion & Wana, 1994; Siyum, 1986) that educating females has not been traditionally valued by the society in Ethiopia, the tradition which is still prevailing in rural areas. This seems to stem from the belief that females are naturally incompetent. As pointed out in a study by Almaze and Barbara (1990), parents, teachers, and the society have labelled females (girls) as shy, timid, fond of jewelery, feeling inferior, absent from school while they have labelled males as adventurous, zealous, strong, friendly and helpful. From the above evaluation given to girls (females), it is obvious that society consider girls as incompetent in achievement situations such as school intellectual works (Siyum, 1986). From such perception again, it is possible to speculate that the society expect females to get married and become house wives rather than go to school with males. Besides girls themselves are told stories, legends, and proverbs that reflect the inferiority of females to males in many aspects of life including intellectual activities like school learning. This again gives the females an impression that they are naturally incompetent in achievement situations, particularly in school intellectual works. Such discouraging self-perception is likely to inhibit the females from studying hard to achieve better in their academic performance, and the present finding may be the reflection of the same phenomenon.

Another explanation for inferior academic performance of females, particularly those of high schools, might be study time. As cited above, in Ethiopia females are, mostly, expected to marry and become house wives. So, they have to learn how to manage household and other necessary skills by working with their mothers. As a result majority of their time, outside the school campus, is spent on house work, and not on studying (Assefa, 1991; Tsion & Wana, 1994). In the case of males, since they are expected to be intellectually strong, they are encouraged to study hard (Siyum, 1986). So, one can generally say that female students in Ethiopia, particularly those in high schools, have less/no study time as compared with their male counterparts, and this might contribute to their poorer academic performance.

Teacher expectation could also be taken as an explanation for the inferior academic performance of female students. As indicated by Almaz and Barbara (1990), teachers tend to have different expectations for male and female students in Ethiopia. The researchers observed that teachers considered female students as fond of jewelry, absent from school, feeling inferior. Such evaluation by teachers reflect that teachers percieve female studnets as incompetent in learning activities. Such an expectation again may influence the interaction the teachers make with students in teaching learning processe. For example, a teacher who conceives male student as more capable than the females may react to a mistake committed by a male student by saying “you have not done carefully” or “You did not study hard.” On the other hand, he/she may react to the same mistake committed by a female student by saying “You are wrong” or “You could not get it right”. These differential reactions may give the two students different impression of themselves. What this teacher has said to the male student implies that he is capable of doing correctly if he does it carefully or if he studies hard. But what he/she has said to the female studnet implies that no matter how carefully she tries or how hard she studies, she is incapable of doing it correctly. From this reasoning one can see that such differential interaction of teachers with male and female students may affect the development of self-concept in the two sexes differently. The male may picture him self as capable whereas the female perceives herself as incapable and can not compete with males successfully. As a result, they may refrain from studying hard even when they get time to do so, and this might have contributed to the result of the the present sutyd.

### **5.1.2. Sex Differences in Locus of Control, Achievement Motivation and Future Time Orientation.**

One of the questions of this sutdy was whether male and female students significantly differ in these variables.. As the result of the t-test (Table 5) portrayed, there is no significant difference between the two sex groups in terms of the total scores of these variables. The result suggests that the inferior academc performance of high school

female students repeatedly demonstrated by empirical research results (e.g., Tsion & Wana, 1994; Bela, 1996; Tekeste, 1990), including the present one, might not be significantly attributed to locus of control, achievement motivation, and future time orientation when their total scores alone are considered.

The inequality of male and female high school students in academic performance, with no difference in the independent variables between them, might be resulted from inability of female students to actualize themselves because of lack of real academic self-concept. This, in turn, could be attributed to females perception of long-standing tradition undermining their intellect, to lack of moral supports from the society, and to lack of study time and necessary facilities for their learnings.

The result is consistent with research findings by several researchers (Belay, 1996; Cole & Sapp, 1998; Daniel, 1992; Chandler, 1979; Dessalegn, 1993) who have demonstrated non-significant differences between the two sex groups in these variables in terms of their total scores. However, factor analytic studies (Belay, 1996; Gjesme, 1979; Chandler, 1979) have discovered that gender differences appear when the total scores of these measures are broken down into their respective subscores. The same result might have possibly been obtained if this technique had been used in this study as well. But since the study was limited only to the total scores of the used instruments, it lacks such detail. This may hopefully be the task of future researches.

On the other hand, the result of this study is contrary to the findings of other researchers (Findley & Cooper 1983; Weiner, 1992; Gjesme, 1979) who have come up with the results indicating males' superiority to females in these variables, or inversely to the research findings (e.g., Darge 1998; Lens, 1975) which showed the superiority of females to males in internal locus of control and future time orientation.

Such inconsistencies may be attributed to methodology used in each study particularly the nature of instruments (Stipek & Weize, 1981; Prociuk & Breen, 1973; Hermans, 1970), and the culture or situations under which the subjects were tested (Klein, 1985; Rotter, 1966).

### **5.1.3. Relation of Locus of Control, Achievement Motivation and Future Time Orientation to Academic Achievement of Male and Female Students.**

The data in Table 7 revealed that the correlation between locus of control and academic achievement is statistically significant in female students ( $r_{.144}=.28$   $p <.05$ ) while the correlation between these variables is not significant in male group ( $r_{.155}=.062$ ,  $p <.05$ ). Moreover, the correlation difference test (Appendix G-i) showed that these two correlation coefficients are significantly different. This indicates that locus of control is related to academic achievement more strongly in female students than in male students.

This result is comparable with the result found by Belay (1996) in the Ethiopia situation. In Belay's findings, the correlation between locus of control and academic achievement was  $-.29$  for female students while this value was  $-.097$  for the male group. The result indicated, like the present finding, that locus of control is related to academic achievement of female students more strongly than to that of male students.

Such results indicate the existence of a pattern that females who are internal in locus of control tend to attain higher in their academic achievement than those who are external in locus of control, while the existence of such pattern is unlikely in the case of male. From this one can observe that, though there is no significant group mean differences between male and female students in locus of control (see section 5.2.), the pattern of this variable in the two sex groups is not similar. That is, high achieving females tend to be internal in locus of control while low achieving group tend to be external in the trait. But in the case of males, both high and low achievers seem to be nearly at equal state in locus of control.

This different patterns of locus of control in the two sex groups may be attributed to the aforementioned defensive externality in which high achieving male students might

respond to the used scale externally, which, in turn, could be the result of the stiff academic competitions in Ethiopian education. Or, inversely, the social desirability in which low achieving male students might respond to the scale in a socially desirable way-as a result of social expectation that male should not generally be submissive-might have created such differences.

This result lends support to the findings of other researchers (e.g., Mwamwend & Mwamwend, 1986; Troub, 1982; Brown, 1980) who found that locus of control (internality) is more associated with the academic achievement of female students than with that of male students.

However, the result is contrary to the findings of studies (e.g., Chandler & Dugovics, 1977; Crandall et al., 1962) which demonstrated that internality is positively related to the academic achievement of males, and not to that of females. Moreover, this result is inconsistent with other findings (e.g., Clifford & Cleary, 1972; Loa, 1980; Findley & Cooper, 1983) which have shown that internality favours the academic achievement of both male and female students. Such inconsistency between this and some of the previous results might be attributed to cultural and methodological differences.

With regard to achievement motivation, the product moment correlation (Table 7) showed that this variable has no significant relationship with the academic achievement of both male and female high school students. This implies the absence of any significantly observable pattern of relationship between achievement motivation and academic achievement in both sex groups. Moreover, though the magnitude of correlation coefficient in females is higher than that in the males, the correlation difference test (Appendix G-ii) did not show significant difference between the two. This indicates that the strength of relationship between these two variables in the two sex groups is not significantly different.

This result partly lends support to the findings of Hoffman (1972) and Crandall et al. (1962) who have found non-significant relationship between academic achievement and achievement motivation for female students. However, the result contradicts the findings of the same research works as the male students are concerned. In both cases the two researchers have found that achievement motivation is significantly related to academic achievement of male students in a positive direction. On top of this, the result goes contrary to the theoretical convention that achievement motivation is consistently related to academic achievement of male students (Loa, 1980).

The result may be attributed to the aforementioned factor of time (see section 5.1.2) that the data for this study was collected a little before/during the first semester final examination. As a result, both high and low achievers in the two sex groups might have equally been motivated to achieve better and have hence filled the used questionnaire in a similar way irrespective of their academic abilities.

The procedure of administration and the type of the items of the used instrument may also be responsible for the inconsistency of this result with the prevailing theoretical conventions and the results of the previous researches. As mentioned earlier (section 5.1.2), all the three instruments were administered at the same time (in one session) due to lack of time and space of administration. So, filling all the three scales, consisting of 72 items, in one session might have become boring for the students who were anxiously looking forward to the coming examinations. Hence, most of the sampled individuals in the two sex groups might have carelessly responded to the items. Besides, the multiple choice type questions of the used instrument might have given the subjects in both groups hard time reading the listed alternatives, and as a result they might have been bored to answer the items throughout in the expected way.

Social desirability associated with this questionnaire (Chanderl, 1979) could also explain the result of this study.

Moreover, the effects of the demographic factors (age, grade level, family background and school conditions) can not be ruled out.

As future time orientation is concerned, the product moment correlation procedure (Table 7) has shown that the correlation between this variable and academic achievement is statistically significant in female students ( $r_{144} = .305, p < .05$ ) while the correlation between the same variables is not significant in the male group ( $r_{155} = .085, p > .05$ ).

This indicates the existence of a pattern that female students with high future time orientation are likely to be high achievers in academic performance than those who are low in the trait, while such pattern is unlikely for the male group in that both high and low achievers in academic performance tend to have similar level of future time orientation. In addition; the correlation difference test (Appendix G-iii) has confirmed that the relation between future time orientation and academic achievement is stronger in females than in males.

This result goes in line with the result of one study (Brandenburg, 1971) which was cited by Gjesme (1979). As reported by Gjesme (1979), Brandenburg has correlated future time orientation density with Scholastic Aptitude Test in male and female groups, and found a positive but small correlation between the two variables for females, not for males. Though the scores of aptitude test were used instead of the score of teacher made achievement test in the cited study, the pattern of relation indicates that future time orientation is related to test scores more strongly for females than for males.

In summary, from the result of the product moment correlation, it is possible to deduce that locus of control and future time orientation are significantly related to academic achievement in females while achievement motivation is not; and none of the three variables is significantly related to the academic achievement of males. Furthermore, locus of control and future time orientation are related to academic achievement more strongly in female students than in their male counterparts, while the strength of the

relationship between achievement motivation and academic achievement in both sex groups is not significantly different.

As underlined earlier, the significant correlation observed between academic achievement and locus of control and future time orientation in female students shows existence of a pattern that those high school female students who are internal in locus of control and those who are high in future time orientation tend to achieve better in academic work than those who are externals and those who are low in future time orientation. But one may ask: Are the significant correlations between academic achievement and these independent variables in this sex group strong enough to enable one to predict the former variable from the latter ones? The carried out multiple regression analysis have already provided answer.

#### **5.1.4. Contribution of the Independent Variables to the Prediction of Academic achievement of Female Students.**

According to the result of the regression analysis (Table 8), the variables locus of control, achievement motivation, and future time orientation together have statistically significant contribution to the prediction of the academic achievement of high school female students, accounting for 10% of the variance in the later variable. But further analysis of beta weights have been conducted to see the relative contribution of each independent variable to the prediction of academic achievement of this sex group.

##### **Locus of Control**

As uncovered by the analysis of beta weights (Table 9), locus of control does not have significant separate contribution to the prediction of academic achievement of high school female students. So, the significant correlation between locus of control and academic achievement revealed by the product moment procedure is not strong enough to enable one to predict the latter variable from the former one. That is, though there is a pattern that high achieving female students tend to be internal than the low achieving

group, this difference in internality is not high enough to enable one to differentiate between the two groups on the basis of their locus of control scores. This sounds that locus of control does not have significant contribution to the low academic performance of low achieving high school female students. These contradictory results of correlation and that of regression techniques may be attributed to the fact that low but significant correlation coefficients like the ones found in the present study may not indicate prediction (Cohen, 1980).

### **Future Time Orientation**

The analysis of beta weights (Table 9) has demonstrated that future time orientation is the only significant predictor of female students' academic achievements. This indicates that the significant Pearson's correlation coefficient of this variable and academic achievement of female students (Table 7) is strong enough to significantly predict the academic achievement of this group. In other words, future time orientation has significant contribution to the variation among high school female students in their academic achievement. More specifically, this variable accounts significantly for the differences between high and low achieving high school female students in terms of academic performance. From this one can safely say that the poor academic achievement of low achieving female group in high schools could considerably be attributed to future time orientation and therefore, a significantly observable improvement in academic achievement may be brought about by improving the future time orientation of this group.

One can realize from the analyses and discussions made in this study that future time orientation has strong relationship with the academic achievement of high school students as compared with locus of control and achievement motivation. As revealed in section 5.3. this variable was a significant predictor of high school students academic achievement next to sex whereas locus of control and achievement motivation were not. Again, as indicated in Table 9, this variable is the only significant predictor of female students' academic achievement while locus of control and achievement motivation

failed to reach the level of significance. Even in the case of male students where all the three variables have no significant relationship with academic achievement, the magnitude of its correlation with same dependent variable was found to be the highest of the three correlation coefficients. From this one may evidently say that, students' level of capability of perceiving, structuring (Planning), timing, and accomplishing their duties ahead of time has a considerable role in facilitating or hindering their academic performance, particularly that of female student.

## **5.2. Summary**

In this study attempts were made to find out the joint and separate impacts of locus of control, achievement motivation, future timeorientation and sex on the academic achievement of high school students. Furthermore, sex differences in these variables and their differential impacts on the academic achievement of high school male and female students were assessed. The data were analyzed on the basis of the following specific questions (raised in the statement of the problem):

1. What are the combined and relative contributions of locus of control, achievement motivation, future time orientation and sex to the prediction of high school students' academic achievement ?
2. Are male and female students with similar state in the independent variables (e.g., internal males vs internal females) significantly different in their academic achievement mean scores ?
3. Do high school male and female students significantly differ in the above independent variables ?
4. Are these variables associated with academic achievement of the two sex groups significnatly ?

5. In which sex group are these association (if any) stronger ?
6. Of the academic achievement of the two sex groups, which one is more predicted by these independent variables taken together ?
7. What are relative contribution (if any) of these variables to the prediction of academic achievement in each sex group ?
8. Which of them is the most predictor of the academic achievement in each sex group.

As indicated in chapter three, the subjects were sampled from five high schools in Arsi Zone. Initially, 414 (207 male and 207 female) students were sampled by the use of stratified multi-stage sampling technique. However, 111 of the sampled subjects were excluded from the data analysis because of different reasons given in chapter three, and hence the analyses were made on the basis of data secured from the remaining 303 (157 male and 146 female) students.

Three instruments (Children's Nowicki & Strickland Internal-external (CNSIE) scale, Prestatie Motivatie Testie (PMT) and future time orientaiton scale) were used to collect the data. After translating into Amharic, all the three instruments were tried out to see their reliabilities in Ethiopian situation.

The statistical methods employed to answer the aforementioned questions were: multiple regression analysis, t-tests, product moment correlation and correlation difference test.

On the basis of carried out data analysis, the results of this study are summarized as follow.

The F-test followed the multiple regression analysis showed that locus of control, achievement motivation, future time orientation and sex have significant joint F-value. In addition, the analysis of beta weight of each variable by the use of t-test has shown that only the beta values of the variable sex and that of future time orientation are statistically significant, while the beta values of locus of control and that of achievement motivation are not significant. In terms of the magnitude of the beta weights, sex, future time orientation, locus of control and achievement motivation are in their descending order.

With regard to *sex* differences in locus of control, achievement motivation and future time orientation, the conducted t-tests have depicted non-significant differences between male and female high school students in terms of these variables.

As the relations of locus of control, achievement motivation and future time orientation to academic achievement in male and female students are concerned, the product moment correlation have demonstrated that correlation of locus of control and that of future time orientation with academic achievement were statistically significant in the case of female students, while the correlation of achievement motivation with academic achievement was not significant. None of the three independent variables was significantly correlated with the academic achievement of the male group. Besides, the correlation difference tests have shown that the correlation coefficients of locus of control and academic achievement, and that of future time orientation and academic achievement for the two sex groups were significantly different, these values being higher in the case of females. But achievement motivation is not differently related to the academic achievement of both sex groups.

According to the carried out regression analysis for the female students alone, locus of control, achievement motivation and future time orientation have significant joint contribution to the prediction of the academic achievement of this group. Furthermore, the analysis of beta weights for female students by the use of t-test showed that only the beta value of future time orientation is statistically significant.

- The variables locus of control and future time orientation were significantly related to the academic achievement of female students indicating the existence of a pattern that female students who are internal in locus of control and high in future time orientation tend to achieve higher in their academic performance than those who are external in locus of control and low in future time orientation while achievement motivation was not. In the case of the male group, none of the three variables was significantly related to academic achievement-suggesting the absence of statistically clear pattern of relationship between these variables and the academic achievement of this group. Moreover, locus of control and future time orientation are related to academic achievement more strongly in female students than in the male group while achievement motivation is not differently related to the academic performance of the two sex groups.
- High school females' academic achievement is significantly predicted by locus of control, achievement motivation and future time orientation jointly, while these variables are non-significant predictors of high school male group at the same educational level. To put differently, these variables, jointly are responsible for the variation among high school female students in terms of academic achievement, not among the male group. With regard to the relative contributions of these variables to the prediction of high school female academic achievement, only future time orientation is significant predictor. According to the finding of this study locus of control and achievement motivation have no significant contribution to the prediction of academic achievement of high school female students. However, since the aforementioned extraneous factors (nature of the used instruments, defensive responses, procedure of instrument administration, age, grade level, family background, and school situations) can possibly obscure the impacts of these variable on the academic achievement in this sex group as well, it would be unwise to take this result for granted.

this group. So, it would be hasty to arrive at the generalization that these variables do not significantly predict the academic achievement of high school male students. To generate a more dependable generalization, further research works considering all the above confounding variables and others are believed to be of paramount importance.

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## **APPENDICES**

### **Instruments of Data Collection**

#### **General Directions**

This booklet contains three scales. The purpose of each scale is to collect some data from high school students for a research work. There is no harm in responding to the items in each scale. The collected information (data) will be used only by the researcher. So, after reading all the items in each scale carefully, give your answers according to the given instructions. Please, respond to all items.

Your genuine responses will have great value. for the fruitfulness of this research work.

Thank you in advance.

## Appendix A

### Measure of locus of control

**INSTRUCTION:** This scale contains 36 YES/NO questions. Answer each question by encircling one of the letters (A or B) Under YES/NO column. If your answer is YES encircle A, otherwise encircle B.

YES NO

- |      |     |  |
|------|-----|--|
| A* B | 1.  | Do you believe that most problems will solve themselves if you just don't fool with them?                        |
| A B* | 2.  | Do you believe that you can stop yourself from catching a cold.  |
| A* B | 3.  | Are some kids just born lucky?   |
| A B* | 4.  | Most of the time do you feel that getting good grades means a great deal to you?                                 |
| A B* | 5.  | Do you believe that if somebody studies hard enough he or she can pass any subject?                              |
| A* B | 6.  | Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?         |
| A* B | 7.  | Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do? |
| A* B | 8.  | Do you feel that most of the time parents listen to what their children have to say?                             |
| A* B | 9.  | Do you believe that wishing can make good things happen?   |
| A B* | 10. | When you get punished does it usually seem it's for no good reason at all?                                       |
| A* B | 11. | Most of the time do you find it hard to change a friend's (mind) opinion?  |
| A B* | 12. | Do you think that cheering more than luck helps a team to win?   |

- A\* B 13. Do you feel that it's nearly impossible to change your parent's mind about anything?
- A B\* 14. Do you believe that your parents should allow you to make most of your own decisions?
- A\* B 15. Do you feel that when you do something wrong there's very little you can do to make it right?
- A\* B 16. Do you believe that most kids are just born good at sports?
- A\* B 17. Are most of the other kids your age stronger than you are?
- A\* B 18. Do you feel that one of the best ways to handle most problems is just not to think about them?
- A B\* 19. Do you feel that you have a lot of choice in deciding who your friends are?
- A B\* 20. Do you often feel that whether you do your homework has much to do with what kind of grades you get?
- A\* B. 21. Do you feel that when a kind of your age decides to hit you, there's little you can do to stop him or her?
- A\* B 22. Have you ever had a good luck charm?
- A B\* 23. Do you believe that whether or not people like you depends on how you act?
- A B\* 24. Will your parents usually help you if you ask them to?
- A\* B 25. Have you felt that when people were mean to you it was usually for no reason at all?
- A\* B 26. Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them?
- A B\* 27. Do you think that kids can get their own way if they just keep trying?
- A\* B 28. Most of the time do you find it useless to try to get your own way at home?
- A B\* 29. Do you feel that when good things happen they happen because of hard work?

- A\* B 30. Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters?
- A B\* 31. Do you feel that it's to get friends to do what you want them to?
- A\* B 32. Do you usually feel that you have little to say about what you get to eat at home?
- A\* B 33. Do you feel that when someone doesn't like you there's little you can do about it?
- A\* B 34. Do you usually feel that it's almost useless to try in school because most other children are just plain smarter than you are?
- A\* B 35. Most of the time, do you feel that you have little to say about what your family decides to do?
- A B\* 36. Do you think it's better to be smart than to be lucky?

Note: " \* " is response in the external direction: it is not indicated in the questionnaire.

## Appendix B

### Measure of Achievement Motivation

INSTRUCTION: In this questionnaire, there are 22 incomplete statements followed by alternatives. Depending on your own personal views, choose one of the given alternatives and complete the statements by encircling the letter of your choice.

1. Working is something:
  - A, I would rather not do
  - B, I don't like doing very much
  - C, I would rather do now and then
  - D, I like doing
  - E, I like doing very much
  
2. At school they think I am:
  - A, very diligent
  - B, diligent
  - C, not always so diligent
  - D, rather easy going
  - E, very easy going
  
3. Other people think I:
  - A, work very hard
  - B, work hard
  - C, work pretty hard
  - D, don't work very hard
  - E, don't work hard.
  
4. When I am working the demands I make upon myself are:
  - A, very high
  - B, high

- C, pretty high
- D, not so high
- E, low
- F, very low

5. When the teacher gives lessons at school:

- A, I usually set my heart on doing my best and making a favourable impression.
- B, I usually pay great attention to the thing being said
- C, my thoughts often stray to other things
- D, I am more interested in things that had nothing to do with school.

6. I usually do:

- A, much more than I resolved to do
- B, a bit more than I resolved to do
- C, a little less than I resolved to do
- D, much less than I resolved to do

7. If I have not attained my goal and have not done a task well, then:

- A, I continue to do my best to attain the goal.
- B, I exert myself once again to obtain the goal
- C, I find it difficult to not lose heart
- D, I'm inclined to give up
- E, I usually give up

8. Now at school I think perseverance is:

- A, very unimportant
- B, rather important
- C, important
- D, very important

- 9, To begin with homework is:
- A, A very great effort
  - B, a great effort
  - C, a rather great effort
  - D, not much effort
  - E, very little effort
10. In school the standards I set myself with regard to my studies are:
- A, very high
  - B, average
  - C, low
  - D, very low
11. If I am called from my homework to watch television or listen to radio, then afterward:
- A, I always go straight back to work
  - B, I will only take a short pause and then back to work
  - C, I will always wait a little before starting again
  - D, I will find it very difficult to begin again
12. Work that requires great responsibility:
- A, I would like to do very much
  - B, I would only do if I am paid well
  - C, I don't think I would be capable of doing
  - D, Is completely unattractive to me.
- 13 I would find a life in which one wouldn't have to work at all:
- A, ideal
  - B, very pleasant
  - C, unpleasant
  - D, very unpleasant

14. To attain a high position in society is:
- A, unimportant
  - B, of little important
  - C, not so important
  - D, rather important
  - E, very important
15. When doing something difficult:
- A, I give it up very quickly
  - B, I give it up quickly
  - C, I give it up rather quickly
  - D, I do not give up to soon
  - E, I usually see it through.
16. I usually find classmates who study very hard:
- A, very nice
  - B, nice
  - C, just as nice as others who don't work as hard
  - D, not nice
  - E, not nice at all.
17. I usually admire persons who had reached a very high position in life:
- A, very much
  - B, much
  - C, little
  - D, not at all
18. I can work at something without getting tired for:
- A, A very long time
  - B, a long time

- C, not too long a time
- D, only a short time
- E, only a very short time

19. Good relations with my teachers at school:

- A, are appreciated berry much
- B, are appreciated
- C, are thought not to be so important
- D, are thought exaggerated in value
- E, are thought completely unimportant

20. I am:

- A, extremely ambitious
- B, very ambitious
- C, not so ambitious
- D, a little ambitious
- E, hardly ambitious at all

21. When I begin something I :

- A, I never carry it to a successful conclusion
- B, seldom carry it to a successful conclusion
- C, sometimes carry it to a successful conclusion
- D, usually carry it to a successful conclusion
- E, always carry it to a successful conclusion

22. Shopping is something:

- A, I like very much
- B, I like
- C, don't like
- D, I hate

## APPENDIX C

### **Measure of Future Time Orientation**

INSTRUCTION: In this scale 14 statements are proposed. After reading each statement, indicate as to how much the idea of each statement is true of you by putting a (✓) mark in one of the four columns given under the phrases: “very true of me”, “Fairly true of me” “not too true of me” and “Not at all true of me”.

Item	is very true of me	is fairly true of me	is not too true of me	is not at all true of me
(1) I always seem to be doing things at the last moment				
(2) I have been thinking a lot about what I am going to do in the future.				
(3) I find it hard to get things done without a dead line				
(4) I need to feel rushed before I can really get going				
(5) Half a year seems to me a long time				
(6) I think about future only to a very small extent				
(7) I am most concerned about how I feel now in the present				

(8) I am not so very much concerned about things a little ahead in time				
(9) It's really no use woring about the future because what will be, will be				
(10) I reflect a great deal about the future, and I feel it is rapidly approaching				
(11) I often seem like the day will never end				
(12) I often find myself looking for ways to kill time				
(13) The future seems very vague and uncertain to me				
(14) Usually I feel time is going too fast				

**COMPUTATIONS OF RELIABILITIES OF  
THE INSTRUMENTS OF DATA COLLECTION**

*Appendix D*

Computation of Reliability Coefficient for Locus of Control Scale by split-half method.

A Row scores obtained from the response of the subjects to the scale

No.	T	E	O	EO
1	12	6	6	36
2	12	6	6	36
3	12	5	7	35
4	13	6	7	42
5	21	10	11	110
6	14	8	6	48
7	15	7	8	56
8	14	6	8	48
9	12	6	6	36
10	18	10	8	80
11	7	3	4	12
12	20	9	11	99
13	11	5	6	30
14	11	5	6	30
15	13	8	5	40
16	13	9	4	36
17	10	4	6	24
18	6	3	3	9
19	16	8	8	64
20	7	4	3	12
21	11	7	4	28
22	20	10	10	100
23	3	0	3	0
24	12	6	6	36
25	11	5	6	30

26	9	4	5	20
27	10	6	4	24
28	16	9	7	63
29	19	10	9	90
30	5	3	2	6
31	9	4	5	20
32	11	5	6	30
33	16	8	8	64
34	13	7	6	42
35	12	6	6	36
36	13	7	6	42
37	15	7	8	56
38	14	7	7	49
39	9	5	4	20
40	10	5	5	25
41	14	6	8	48
42	9	5	4	20
43	10	5	5	25
44	16	9	7	63
45	9	4	5	20
46	11	6	5	30
47	18	9	9	81
48	8	4	4	16
49	12	6	6	36
50	14	8	6	48
51	11	5	6	30

52	9	6	3	18
53	8	3	5	15
54	12	5	6	30
55	9	5	4	20
56	13	7	6	42
57	6	2	4	8
58	13	7	6	42
59	10	6	4	24
60	13	6	7	42
61	10	5	5	25
62	9	5	4	20
63	14	6	8	48
64	12	7	5	35
65	12	5	7	35
66	20	10	10	100
67	12	7	5	35
68	9	5	4	20

Where,

T = Total scores

E = Scores of items  
of even numbers

O = Scores of items  
of odd numbers

EO = The product of  
E and O

## B. Computation

### 1. Reliability of half test

$$r_{EO} = \frac{N\Sigma EO - \Sigma E\Sigma O}{\sqrt{[N\Sigma E^2 - (\Sigma E)^2] [N\Sigma O^2 - (\Sigma O)^2]}}$$

Where

- $r_{EO}$  = reliability coefficient
- $\Sigma E$  = sum of scores of even number items
- $\Sigma O$  = sum of scores of odd number items
- $\Sigma EO$  = sum of product of E and O
- $N$  = number of students properly responded to the scale

Give

$\Sigma E = 413$	$\Sigma O^2 = 2651$
$(\Sigma E)^2 = 170569$	$\Sigma EO = 2640$
$\Sigma E^2 = 2791$	$\Sigma E\Sigma O = 166852$
$\Sigma O = 404$	$N = 68$
$(\Sigma O)^2 = 163216$	

$$r_{EO} = \frac{68 \times 2640 - 166852}{\sqrt{[68 \times 2791 - 170569] [68 \times 2651 - 163216]}}$$
$$= 0.69$$

### 2. Reliability of the whole test

$$r_{jx} = \frac{n \times r_{EO}}{1 + (n-1)r_{EO}}$$

where  $n$  = number of subtests, which is 2 in this case.

$$r_{jx} = \frac{2 \times 0.69}{1 + 0.69}$$
$$= 0.82$$

*Appendix E*

Computation of Reliability Coefficient of Achievement Motivation Questionnaire by KR - 20 Method.

A. Row scores of each individual responded to the questionnaire.

1	82	26	91	51	90
2	88	27	87	52	80
3	86	28	85	53	94
4	90	29	80	54	83
5	98	30	83	55	82
6	83	31	89	56	84
7	83	32	76	57	87
8	86	33	81	58	68
9	81	34	77	59	90
10	85	35	77	60	95
11	82	36	85	61	80
12	69	37	87	62	89
13	69	38	73	63	58
14	93	39	79	64	93
15	83	40	87	65	82
16	75	41	97	66	81
17	88	42	91	67	98
18	77	43	91	68	81
19	92	44	96	69	82
20	90	45	77	70	92
21	62	46	83	71	93
22	87	47	86	72	89
23	93	48	86	73	78
24	86	49	92	74	83
25	95	50	72	75	83

$$6x^2=62.1$$

B. Standard Deviations ( $P_i$ ) and variances ( $P_i^2$ ) of each item.

$P_i$	$P_i^2$
.44	.19
1.08	1.18
1.16	1.35
.73	.54
.69	.47
.99	.98
.79	.62
.52	.27
.94	.88
.77	.59
.51	.26

$P_i$	$P_i^2$
.90	.81
1.25	1.56
.57	.32
.45	.20
.82	.67
.44	.19
.52	.27
.88	.77
.35	.12
1.12	1.25
.82	.83

$$\Sigma\sigma_{Pi}^2 = 14.33$$

C. Computation of the Reliability Coefficient

$$KR-20 = \frac{K}{K-1} \left( 1 - \frac{\Sigma\sigma_{Pi}^2}{\sigma_x^2} \right)$$

Where,

KR-20 = Kuder Recharadson reliability coefficient.

K = number of students property responded to the scale

$\Sigma\sigma_{Pi}^2$  = sum of variance of each item.

$\sigma_x^2$  = variance of total row scores

Given

$$K = 75$$

$$\Sigma\sigma_{Pi}^2 = 14.33$$

$$\sigma_x^2 = 62.1$$

$$KR-20 = \frac{75}{75.1} \left( 1 - \frac{14.33}{62.1} \right)$$

$$\approx 0.78$$

## Appendix F

### Computation of Reliability Coefficient of Future Time Orientation Scale by Cromback Alpha

#### A. Row scores of each individual

1	38	26	44
2	45	27	49
3	45	28	37
4	29	29	37
5	36	30	38
6	44	31	41
7	36	32	41
8	40	33	35
9	45	34	35
10	36	35	44
11	37	36	39
12	29	37	40
13	43	38	43
14	40	39	42
15	33	40	35
16	46	41	35
17	35	42	40
18	46	43	34
19	35	44	47
20	33	45	40
21	47	46	29
22	29	47	49
23	48	48	29
24	43	49	43
25	37	50	36

#### B. Standard Deviations ( $P_i$ ) and variances ( $P_i^2$ ) of each item

51	46	$P_i$	$P_i^2$
52	39	1.03	1.07
53	34	.58	.34
54	32	1.13	1.27
55	44	.92	.85
56	40	1.01	1.03
57	39	1.00	1.00
58	30	.95	.90
59	38	.97	.94
60	44	1.30	1.69
61	40	.84	.71
62	39	1.12	1.26
63	38	.96	.92
64	45	1.12	1.29
65	47	.93	.86
66	38		
67	49		
68	38		
69	47		

$$\Sigma p_i^2 = 14.1$$

$$\sigma_x = 5.53$$

$$= 34.3$$

### C. Computation of the Reliability Coefficient

$$\gamma = \frac{k}{K - 1} \left( \frac{1 - \sum \sigma P_i^2}{\sigma x^2} \right)$$

Where

$\gamma$  = reliability coefficient

$K$  = number of items

$\sum \sigma P_i^2$  = sum of variance of each item

$\sigma x^2$  = variance of total row scores

Given

$$K = 14$$

$$\sum \sigma_{pi}^2 = 14.1$$

$$\sigma_x^2 = 34.3$$

$$\begin{aligned} \gamma &= \frac{14}{14 - 1} \left( 1 - \frac{14.1}{34.3} \right) \\ &= (1.08) (1 - 41) \\ &= (1.08) (0.59) \\ &= 0.6372 \\ &\approx 0.64 \end{aligned}$$

## Appendix G

Computation of correlation difference test at the critical value of  $Z = \pm 1.96$ .

### Formula

$$Z_{obs} = \frac{Z_{r_f} - Z_{r_m}}{SEDZ} = \frac{Z_{r_f} - Z_{r_m}}{\sqrt{\frac{1}{N_f-3} + \frac{1}{N_m-3}}}$$

Where

$Z_{r_f}$  = Z value of  $r_f$  (correlation in females)

$Z_{r_m}$  = Z value of  $r_m$  (correlation in males)

$$SEDZ \left( \sqrt{\frac{1}{N_f-3} + \frac{1}{N_m-3}} \right) \text{ Standard error of differences between the } Z\text{'s}$$

$N_f$  (number of females) = 146

$N_m$  (number of males) = 157

**N.B.** Z values of  $r$ 's were taken from transformation table (Marascuilo & Serline, 1988, p. 766)

i)  $r$ 's between Locus of control and Academic Achievement

Given:

$$r_f = -0.2791, Z_{r_f} = 0.288$$

$$r_m = -0.0624, Z_{r_m} = 0.06$$

$$\begin{aligned} r_m &= .0070, Z_{r_m} = 0.00 \\ Z_{obs} &= \frac{0.321 - 0.08}{\sqrt{\frac{1}{146-3} + \frac{1}{157-3}}} \\ &= \frac{.241}{115} \\ &= 2.09 \end{aligned}$$

## Appendix G

Computation of correlation difference test at the critical value of  $Z = \pm 1.96$ .

### Formula

$$Z_{obs} = \frac{Z_{r_f} - Z_{r_m}}{SEDZ} = \frac{Z_{r_f} - Z_{r_m}}{\sqrt{\frac{1}{N_f-3} + \frac{1}{N_m-3}}}$$

Where

$Z_{r_f}$  = Z value of  $r_f$  (correlation in females)

$Z_{r_m}$  = Z value of  $r_m$  (correlation in males)

$SEDZ \left( \sqrt{\frac{1}{N_f-3} + \frac{1}{N_m-3}} \right)$  Standard error of differences between the Z's

$N_f$  (number of females) = 146

$N_m$  (number of males) = 157

**N.B.** Z values of r's were taken from transformation table (Marascuilo & Serline, 1988, p. 766)

i) r's between Locus of control and Academic Achievement

Given:

$$r_f = -0.2791, Z_{r_f} = 0.288$$

$$r_m = -0.0624, Z_{r_m} = 0.06$$

$$\begin{aligned}
 Z_{obs} &= \frac{0.288 - 0.06}{\sqrt{\frac{1}{146-3} + \frac{1}{157-3}}} \\
 &= \frac{0.228}{0.115} \\
 &= 1.983
 \end{aligned}$$

ii)  $r$ 's between Achievement Motivation and Academic Achievement.

Given:

$$r_F = 0.1283, Z_{rF} = 0.131$$

$$r_m = 0.0312, Z_r = 0.03$$

$$\begin{aligned}
 Z_{obs} &= \frac{0.131 - 0.03}{\sqrt{\frac{1}{146-3} + \frac{1}{157-3}}} \\
 &= \frac{.241}{.115} \\
 &= 0.87
 \end{aligned}$$

iii)  $r$ 's between Future Time Orientation and Academic Achievement.

Given:

$$r_F = .3053, Z_{rF} = 321$$

$$r_m = .0846, Z_{rm} = 0.08$$

$$\begin{aligned}
 Z_{obs} &= \frac{0.321 - 0.08}{\sqrt{\frac{1}{146-3} + \frac{1}{157-3}}} \\
 &= \frac{.241}{.115} \\
 &= 2.09
 \end{aligned}$$

## DECLARATION

I, the undersigned, declare that this thesis is my original work, has not been presented for a degree in any other university, and that all sources of materials used for the thesis have been duly acknowledged.

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