THE RELATIONSHIP BETWEEN SCHOOL CLIMATE AND STUDENT ACADEMIC ACHIEVEMENT IN THE SECONDARY SCHOOLS OF ADDIS KETEMA SUB-CITY

ADDIS ABABA UNIVERSITY

COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES

EDUCATIONAL LEADERSHIP AND MANAGEMENT

BY

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Declaration

This thesis is my original work and has not been presented in any other University, and all sources consulted for this thesis have been properly acknowledged.

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Approval

This thesis has been submitted for examination with my consent and approval as a thesis advisor.

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This is to certify that the thesis prepared by Desta Mersha Odda entitled: The relationship between School climate and student achievement in Addis ketema sub-city secondary schools submitted in partial fulfillment of the requirements for degree of Master of Arts in (School Leadership and Management) complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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Abbreviations

AP- academic press

BPR- business process re-engineering

BSC- balanced score card

CL- collegial leadership

CE- community engagement

EGSLCE - Ethiopia General School Leaving Certificate Examination

GEQIP- General Education Improvement Pacage

MOE – Ministry of Education

OCDQ -Organizational Climate Descriptive Questionnaire

OHI- Organizational Health Inventory

SCI - School Climate Index

SES - Socio Economic Status

SIP – school improvement program

TP- teacher professionalism

ABSTRACT

This study examined the relationship between school climate and student achievement based on teachers' perceptions of school climate in two secondary schools of Addis Ketema sub-city. To conduct the study, correlation design was employed; purposive and random sampling technique was used to select the sub-city and the sample schools respectively. Moreover, availability sampling technique was applied to select participant teachers. Organizational climate was measured using the School Climate Index (SCI) developed by Tschannen-Moran, Parish and Dipaola and student achievement was measured by students' test scores at the Ethiopia General Education Leaving Certificate Examination (EGSLCE) in the year 2016/17. One hundred sixty teachers and archival data of 1354 students were involved in the study. The school climate index description questionnaire was the main data gathering instrument for this study. Frequency, percentage, mean, standard deviation, t-tests and two-way-ANOVA were used to analyze the collected data. The result of this study showed that Addis Ketema sub-city secondary schools have poor school climate, but has a positive relationship with students' academic achievement. Teacher professionalism, collegial leadership, academic press and community engagement from highest to least respectively have significant relationship with student academic achievement in general. The finding further reveals that a school with larger size has small, but not exaggerated effect on student achievement. In performing this study, the researcher found that, the overall school climate index and the subscales (collegial leadership, teacher professionalism, academic press and community engagement) of the two schools is less than 4 (which is 'quite a bit'); that implies the two schools had poor school climate and is not conducive for the teaching learning process. It is recommended that school leaders should design school improvement plans that involve the school climate construct. Principals in particular need to be mindful that the climate of a school significantly affect achievement.

CHAPTER ONE

INTRODUCTION

This chapter presents background, statement of the problem, objective, significance, delimitation, limitation and organization of the study. The conceptual framework and operational definitions of the constructs used in the study are also included in this chapter.

1.1 Background of the Study

Education plays vital role for human development through educating the youth; however, this to happen, social organizations like schools should be available with all the necessary facilities. The school is a place where socialization and learning can take place. It is an organization with the given environment upon which a child is formally educated in order to attain educational goals. Human beings, have unlimited interest of learning so as to know the secret behind the world, but, may however be limited by the quality and characteristics of school life (Council, 2007) and facilities that the immediate environment offers. According to Umoh (2006), nature only provides the raw materials in the form of potentials, but it is the environment that determines the extent of development.

In addition to the main actors, such as teachers, principals and students; parents/community, governmental and non-governmental organizations and the government itself should involve meaningfully in the education system of one's country to get the maximum benefits out of it. Further, the outcome of education can not be seen or measured immediately in the same way like any product of a factory.

Like any education system, the Ethiopian education system is consisting of primary (grades 1-8), secondary (grade 9 &10) and preparatory (grade 11 &12) levels. At the end of grade 10, students have got the opportunity to sit for the national examination known as Ethiopian general school leaving certificate examination (EGSLCE). Regarding grade 10 national examination, some secondary schools in Addis Ababa perform better than others. A closer look at to this situation immediately tells us that in secondary schools there is a great disparity in student achievement. This disparity in academic achievement

may be due to various reasons of which, one is cognitive ability among students. However, researchers have indicated that cognitive ability accounts only a small portion of the disparity in academic achievement (Hilliard, 1994).

Undoubtedly, a number of other factors within and out of the school environment that are external to the students may affect students' academic performance and hence schools effectiveness. Some of these factors include: the school climate (Vasquez, 2012; Geleta, 2017; Bergren, 2014; Okendo et al, 2013; Odeh, Oguche et al., 2015; Solomon, Dagnaw 2014), the effect of school resources or facilities (Greenwald, Hedges et al. 1996; Schneider 2002), qualification, experience and commitment of teachers(Park, 2005; Ajani & Akinyele, 2014), teacher Classroom Practices and Student Performance (Wenglinsky, 2001), student - teacher ratio (Ajani & Akinyele, 2014), the socioeconomic status (Pettigrew, 2009; Breger, 2014), the relationship between principals' instructional leadership and student academic achievement (Fuller, Baker, & Young, 2007; Dobbie, 2011; Alsobaie, 2015; and Counties, 2017), the relationship between teachers and students (Luz, 2015; Gablinske, 2014), teachers self-efficacy and community engagement (Lacks, 2016), principal's leadership style (Okoji, 2015) and student attendance (Lamdin, 1996).

A brief explanation about school climate has been given by educators for the last one hundred years. It was not until the 1950's that educators began to systemically study school climate. The development of scientifically sound school climate assessment tools urged a research tradition that grows to this day. It is obvious that the quality of school climate of a given school do affect the performance and effectiveness of the school community in general and the students in particular. In this regard, the school council (2007) described that school climate refers to the quality and character of school life.

Furthermore, Okendo et al., (2013) explicitly described that there are mainly two types of school climate, namely positive and negative climate that influence student performance. Positive school climate permits students to perform better as it provides support for students morally, physically as well as academically. On the other hand negative school climate cannot bring about school improvement or enhanced school effectiveness and

entails that the school is poor or lacks physical resources, positive interactions or learning does not taking place efficiently. The school which has a positive climate fosters learning to take place and the school which has negative climate impedes learning and hence students may develop tendency of disliking subjects in particular and the school in general. In this case, the researcher has good experiences in various schools of Addis Ababa. Many schools particularly recently opened schools have faced various problems such as very small school compound where students are almost can't play any game, lacks or absence of laboratory rooms and materials, lack of office for administrators, poor supply of water, absence of neat toilet, noise and sound pollution…etc., all these and other limitations of the schools lead to negative interactions among and weak relationship between the school community; and hence it is a common experience to see or observe poor schools' performance and student achievement in most schools of Addis Ababa City Administration.

Many other factors such as socioeconomic status (SES), the school facility, attendance, discipline, school size and parent's education levels affect students' academic achievement (Bergren and Alexander, 2014). Here, school size is mentioned as one of the factor that impact negatively on students' achievement, though, the effect is small. However, on the other hand, schools with bigger size scored better result than the smaller one Breger (2014). Moreover, there are schools in Addis Ababa city administration with bigger size, but, achieved better; thus, it requires further study.

As previously mentioned, there are a number of factors that affect students' academic achievement. Moreover, a recently growing body of literature in a developed countries has indicated that, Collegial leadership, teacher professionalism, and academic press (the extent to which the school is driven by a quest for excellence) which are aspects of school climate, makes significant contributions to student achievement (Hoy, Hannum and Tschannen-Moran, 1998). Regarding this, studies have also been conducted on a similar school climate constructs in developing countries, and the findings had shown almost a similar result. Vasquez (2011) in Belizean secondary schools, Abeya (2017) in secondary schools of Ethiopia, Woldegerima and Dagnew (2014) in Bahir Dar and Addis

Ababa secondary schools respectively, Okendo et al., (2013) in Kenyan secondary schools, Oguche et al., (2015) in Nigerian secondary schools.

Additionally, there are also other factors that affect students' academic achievement such as family income, occupation, and education level (Chevalier, Harmon, O'Sullivan, & Walker, 2013; Altun, 2017), school physical facilities (Earthman et al., 2002,) and teachers' factors (attitudes, beliefs, tolerance, and training) characterizes positive school climate and have a strong relations with students' academic achievement (Sherman, 2007; Negassa, 2014).

The School climate has proven to have a strong effect on student achievement, though, researchers use non uniform and inconsistent variables to measure school's climate. For instance, studies on school climate based on the relations between teachers, students and principals as a climate constructs, found that all of them were predictors of mathematics and physics achievement, however, there exists some difference in the magnitudes of prediction. All evaluations were important predictors of mathematics and physics achievement with principals' evaluations being the strongest one. The results of their study had further shown that a positive school climate was related to high student achievement when evaluated by teachers and principals, but, with low student achievement when evaluated by students (Kozina, Rožman, Perše, & Leban, 2010). The findings of this research had shown that, unless some extra effort should be applied by stake holders, to motivate and fully engage students to the learning activities with the right perception, it is hardly possible to get the expected students' academic achievement, no matter, how good climate a given school may have.

In this regard, one of the most important roles that the schools in general and parents in particular should play is, to find ways to motivate students to reach their full potential. Some schools have sought to motivate students by utilizing both intrinsic and extrinsic motivation (Walter, 2014). However, there are a number of factors that affect students' behavior, such as the peers, parents even the media especially television programs (e.g, 'Kana', sport) heavily influence students. And hence, due to these and other factors, it is difficult to motivate students in the classroom. And moreover, the other major factor that

contributes for students to have low perception toward achievement may be due to low or absence of job opportunity, indeed, this is related to good governance. Now days, it is not uncommon to see numerous number of educated unemployed youth in Addis Ababa city administration. Graduated students with sufficient capability become idle and always busy in finding job, while others with the same, even having less proficiency have the opportunity to engage in activity where they are interested and become wealthy enough.

It is obvious that students, staff, parents and the community will be affected by school climate. Numerous researchers had shown that, positive school climate has a major impact on the success of all students in the school. Furthermore, positive school climate and other important dimensions of school success such as academic achievement, high morale, stuff productivity and effective management have a link between them (Kapan, 1987). However, majority of students in Addis Ababa in general and Addis Ketema in particular are far reaching from what we call high morale, however, it might have various reasons. Additionally, from the researcher common experience, in schools where there is favorable learning environment, the interaction between and within students, teachers, principals and the school community has become very smooth; and moreover, wasting of periods, dropout rates and problems related to student misbehaviors will be minimal.

Dagnaw (2014) in his study of the impact of school climate on students' academic achievement in Bahir Dar secondary schools found that, there is positive school climate for the teaching and learning process. He further revealed that school climate has a direct relationship with student academic achievement. Dagnaw considers teacher-student relationship, students-peer relationship, administration of the school, security and maintenance of the school as a school climate constructs; yet, some other researchers use the four school climate factors (collegial leadership, teacher professionalism, academic press and community engagement) as a school climate constructs, still others consider some other dimensions such as the social or emotional environment, the learning environment and the physical environment as a school climate constructs. From this, therefore, the researcher realizes that it is hardly possible to reach at one conclusion on the effect of school climate on students' academic achievement (Berkowitz, Moore, Astor, & Benbenishty, 2017). Over the years, researchers have realized that many of the

subscales that exist in both frameworks overlap and can be combined to form consolidated frameworks. The conceptual underpinning of this study lies in a consolidated school climate framework developed by Tschannen-Moran, Parish and Dipaola (2006); these researchers combined elements of the open schools framework (work of Halpin and Croft, 1963) and elements of the healthy schools framework (work of Hoy and his colleagues, Hoy & Clover, 1986; Hoy & Forsyth, 1986; Hoy & Miskel, 1991; Hoy, Tarter & Kottkamp, 1991) to develop a consolidated framework called the School Climate Index (SCI). This recently developed framework looks at the interactions in a school in terms of collegial leadership, teacher professionalism, academic press, and community engagement.

1.2. Statement of the problem

In spite of the fact that numerous reforms like school improvement program have been implemented at all levels of schools (MOE, 2008), it is a common phenomenon to observe dissatisfaction of the community that there is lack of conducive and orderly school climate in the Addis Ababa schools in general and Addis Ketema sub-city in particular. The behavior and achievement of students are becoming worse and worse from time to time and hence many stake holders are worried about the declination of the education quality, for the fact that, it was never be seen in the history of modern education in Ethiopia.

Early studies on student academic achievement primarily were focused on the effects of socioeconomic status. The research literature had shown that this factor is correlated with student achievement (Pettigrew, 2009; Breger, Bergren and Alexander, 2014). In Addis Ababa city Administration, it is a common phenomenon to see a number of students coming from poor families and, thus, is coming without lunch. In fact, now a day, there is a school feeding program in primary schools, but, not yet, in secondary schools. According to the researcher near past experience, there were teachers who have given different support for those students who have faced severe problems; it is in fact, true even today. So, it is not difficult to understand, how students' academic achievement is affected by SES of the family or the students.

Studies also have indicated that school climate, discipline and physical facilities have significant influence on academic achievement of secondary school students (Okoji, 2015; LN Makewa, Role, Role, & Yegoh, 2011). However, regarding schools in Addis Ababa, much budget and enough human power has been assigned to each school. Concerning human power, four directors/ principals qualified teachers with minimum qualification of bachelor degree are assigned in each school. So, the question here is, why not quality education?

It has been described in the background section that, researchers use different school variables to study school climate. However, for whatever variables, as to the effort made to search different studies on the relationship between school climate and student achievement, numerous researches have been done with a specific findings in developed countries (Vasquez 2012; Cohen, McCabe, Michelli, & Pickeral, 2009; Freiberg, 1998; Marshall, 2006; Milam, 2014; NSCC, 2011; Thapa et al., 2013; Tschannen-Moran, 2011) but very few in Ethiopia (Abeya, 2017; Woldegerima, 2014, Dagnaw, 2014). Moreover, Vasquez in his literature review had described that he couldn't find any study on school climate in developing countries which strengthen the analysis given above. In the research he had conducted in Belize which is one of the developing country, he found out that school climate has a significant and positive relationship with student achievement in Belizean secondary schools. He further explained that, the finding was similar to those research studies conducted in Virginia, Ohio, and New Jersey schools. In this regard, Abeya (2017) also discovered that school climate has a significant and positive relationship with student achievement in Ethiopian secondary schools, however, a weak one.

Furthermore, Studies revealed that a positive school climate is associated with positive student learning and academic achievement, increased student graduation rates, and teacher retention, decreased student absenteeism in high school (Gottfredson & Gottfredson, 1989). School climate which is characterized by many factors, in fact, is directly related to the overall development of students; and, hence, the influence of school climate either positively or negatively is related not only to

immediate student achievement but also its effect seems persists for future life. (Hoy, Hannum, & Tschannen-Moran, 1998).

Numerous school climate studies have shown that, positive school climate plays vital roles to student academic achievement. To alleviate, if not completely solve the existing problems, it is indispensable that principals and teachers should strive to establish an inviting, orderly and positive school climate of their schools in order to facilitates the teaching learning processes and ultimately improve students' academic achievement.

Researchers in the field have suggested that studying the climate of schools, enables the practitioners to identify those dragging factors, then immediately act on them and improve schools functioning (Hoy and Miskel, 1997). This study examines how one such factor (school climate and its subscales) can affect student achievement in the Addis Ababa secondary schools context.

To the knowledge of the researcher, a research done on the relationship between school climate and student achievement using the school climate index frame work developed by Tschannen-Moran, Parish and Dipaola (2006) which focuses on teachers' perception of the school climate is very limited. Besides, most school climate studies have been conducted in developed countries. This study, however, is conducted in Addis Ketema sub-City secondary schools, where the number of students, dynamics, management, and systems of schools in general differ from those of the developed ones.

Moreover, the researcher believed that, if teachers have negative attitude towards their work /teaching/, it will have a significant negative impact on students' achievement and behavior. Hence the study tries to assess the relationship between school climate and student achievement based on teachers' perception of school climate in Addis Ketema Sub-City government secondary schools. To this end the following research questions were considered:

1.2.1. Research questions

1. How conducive is the school climate (collegial leadership, teacher professionalism, academic press and parent engagement) in Addis Ketema sub-city secondary schools as perceived by teachers and as measured by school climate index?
2. Is there a statistically significant difference between the two sample schools in students EGSLCE performance due to school climate difference?
3. Does school size (that is, the number of students) have a significant relationship with school climate and hence with students' academic performance?

1.2.2. Objective of the study

1.2.2.1. General Objective

The general objective of this study is to point out/examine the kind and strength of relationship between school climate and student achievement and explore the extent to which the four school climate factors do affect students' academic achievement, and to explore the relationship between school size and student achievement.

1.2.2.2. Specific Objectives

Specifically this study has the following objectives:

- To find out how conducive is the school climate of the schools in Addis- Ketema sub-city secondary schools.
- To find out the overall relationship between school climate and students' academic achievement in Addis- Ketema sub-city secondary schools.
- To find out if there exist a significant relationship between school size and students' academic achievement.

1.3. Significance of the Study

Many schools in Addis Ababa in general and Addis Ketema in particular are suffering from delivering quality education to enhance student achievement. Therefore, the study will have the following significance for concerned stakeholders:

The increased emphasis on quality education and student achievement is causing many schools to engage in an assessment to determine how best to improve student performance. This study will highlight one aspect of education that leaders can examine

in their schools, if their purpose is to improve the school effectiveness. This study will provide important information to school leaders and educators as it will give them an additional opportunity to consider when looking at factors that can possibly influence student academic achievement.

Furthermore, this information becomes very useful in the planning process particularly in school improvement plan for the fact that the study will focus on four different subscales of school climate (teacher professionalism, academic press, parent/community engagement/ and collegial leadership). Any school principal can consider each of these aspects during the time of developing school improvement plan. Nebiyu (2015) has explained that, the present situation requests a highly encouraging and participatory school climate. Therefore, this research will play a paramount importance to get awareness about school climate and will help school leaders to improve their administrative and academic performance.

1.4. Delimitation of the Study

In 2016/17 academic year, the effectiveness of schools in Addis Ketema sub-city secondary schools had shown great disparity in EGSLCE score. For instance, Dilachin secondary school with 922 total number of grade 10 students has taken the lead (98% of the students) had scored 2.00(50%) and above; this 2.00 is nationally considered as the pass mark. On the other hand, among the four secondary schools in the sub-city, Efoita secondary school had scored the least (77% only); however, it has the least number of students compared to the other four schools, explicitly, the number of grade 10 students of Efoyta is almost half of that of Dilachin (432:922) which is (1:2.13). Therefore, firstly this disparity in the EGSLCE scores among the schools in the same sub-city, and secondly financial as well as time constraint had forced the researcher to delimit the study to be in Addis ketema sub-city government secondary schools only.

1.5. Limitations of the Study

Student achievement may be affected by various factors, such as cognitive ability, socio economic status and educational background of parents, relationship between and among teachers, students and principals; teachers' commitment, principal leadership style, parental/ community involvement, students' engagement, school facilities and the school environment as well. However, this study treated only the relationship between school climate and student achievement based on teachers' perceptions on school climate.

1.6. Organization of the Research

This research was organized in five chapters. The first chapter is dedicated to the introduction, which in bodied background of the study, statement of the problem, significance of the study, delimitation of the study, conceptual framework of the study, as well as operational definition of terms.

The second chapter, deals with review of the related literature. The methodology and design of the study employed are discussed in the third chapter. The fourth chapter presents data analysis and interpretation of data and finally, the fifth chapter the summary, conclusion and recommendation of the study.

Conceptual Framework

In any organization, there are a series of interactions that occur. Schools as organizations are not different as there are a series of interactions occurring among the students, teachers, administrators, and the wider community. These interactions may affect the individuals in a school as well as the total environment and the climate of the school. In an effort to understand school climate, it is important that there is a look at the series of interactions that occur in a school (Vasquez, 2011). Furthermore, studies have shown that school climate is relatively continuing quality of the entire school that is experienced by its members, describes the perception of their collective routine behavior and affects their attitudes and behavior in the school climate (Hoy, and Miskel, 1996).

Researchers utilize various approaches /frameworks/ to study school climate. For example, Haynes, Emmons, Gebreyesus, & Ben-Avie (1996) used School Climate

Survey that contains thirteen dimensions of school climate and specifically assesses students' perceptions in the following areas.

1. Academic Focus
2. Achievement Motivation
3. Caring & Sensitivity
4. Collaborative Decision Making
5. Equity & Fairness
6. Leadership
7. Order & Discipline
8. Parent Involvement
9. School Building Appearance
10. School–Community Relations
11. Staff Dedication to Student Learning
12. Staff Expectations
13. Student–Teacher Relationships

Moreover, the scale (a popular measure of school climate) developed by Charles F. Kettering (1987), is also widely used to measure school climate; however, the result of the factor analyses showed a different result than was proposed by the scale's developers (Johnson, Dixon, & Robinson, 1987). The General Climate Factors is comprised of the following eight subscales:

1. Respect
2. Trust
3. High morale
4. Opportunity for input
5. continuous academic & social growth
6. Cohesiveness
7. School renewal and
8. Caring.

Additionally, researchers who have studied about "effective schools" and "school climate" have proposed the frameworks of a comprehensive theory of school effectiveness (Keefe & Kelley 1990). The purpose of the framework is to provide a

reference point for understanding and communicating what we have learned about best practice and promising practices for

1. Developing professional learning communities
2. Leading and sustaining school improvement
3. Improving a school's instructional effectiveness

Lastly but not least, two major frameworks of school climate have emerged over the years. Initial works of Halpin and Croft (1963) put the foundation for the open schools framework while the work of Hoy and his colleague (Hoy & Clover, 1986) have contributed to the healthy schools framework. These frameworks have been used for many years to construct various school climate instruments which is used to measure school climate. Both frameworks depend largely on the relationships between members of the school and the interactions that will happen between and among individuals in a school.

Researchers have realized for many years that, many of the subscales that exist in both frameworks overlap and can be combined to form consolidated frameworks. The conceptual underpinning of this study will lie in a consolidated school climate framework developed by Tschannen-Moran, Parish, & DiPaola, (2006). These researchers combined elements of the open schools framework (work of Halpin and Croft, 1963) and elements of the healthy schools framework (work of Hoy and his colleagues) to develop a consolidated framework called the School Climate Index (SCI). This framework presented by Tschannen-Moran, Parish and Dipaola (2006) looks at the interactions in a school in terms of collegial leadership, teacher professionalism, academic press, and community engagement. These subscales provide the basis for this current study which will focus on the relationship between school climate, as measured by this framework, and student achievement in a school. The result of this study using this framework will be very useful to educators since the interactions that occur in a given school do affect the operation of a school.

Operational Definitions of key terms

1. **School climate** is a set of internal characteristics that distinguishes one school from another as perceived by teachers which includes the four school climate factors (collegial leadership, teacher professionalism, academic press and community engagement). This variable is measured by school climate index.
2. **Teacher professionalism** is one of the four school climate factors that describe teacher's behavior which is characterized by commitment, engagement, respect the professional expertise of colleagues, professional interactions, and their support with one another and help each other.
3. **Collegial leadership** is the behavior of the leader, director or principal that creates conducive school environment for the teaching learning activities.
4. **Community/parent/engagement** is the extent to which the school has nurtured a useful relationship with its community and the degree to which the community members play important roles to the school so as to facilitate the teaching learning process and support school's effectiveness.
5. **Academic press:** Academic press is the extent to which the school is driven by a quest for excellence.
6. **Academic achievement:** is the score of students on grade 10 national examination as measured by EGSLCE.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The focus of this literature review is mainly addressing the study's basic question:
Does school climate affect student academic achievement in Addis Ketema sub-city secondary schools? It provides the definition, concept and some other issues related to school climate and explain how it affects student academic achievement.

Numerous Research studies have shown that, school climate is linked to: student interpersonal relationship and student-teacher relationship (Roberts, 2007), school division climate and student achievement (smith, 2005), teachers commitment (Raman, Ling, & Khalid, 2015), teachers motivation (Nebiyu, 2015), student conduct and socio-emotional outcomes (Bera, 2013), parent engagement (Collins, 2010), principal and teacher openness (Jankens, 2011).

2.1. The definition and concept of school climate

Researchers define school climate from different perspectives; for instance, Johnson and Johnson, (1993) define school climate in its broadest sense as, "school climate may include anything from environmental aspects of the school to the personalities of the students and educators as well as academic performance, levels of physical activity, and the processes and materials used throughout instructional procedures". However, it is hardly possible to get schools that satisfies all these conditions in Ethiopian context.

As a matter of fact, school environment varies significantly from organization to organization. Although some schools feel friendly, attractive, and supportive, others feel awkward, unwelcoming, and even unsafe. The feelings and attitudes that are offered by a school's environment are referred to as school climate. Even though it is difficult to provide a concise definition for school climate, most researchers agree that it is a multidimensional construct that includes physical, social, and academic dimensions. To this end, school climate dimensions were further classified as: Safety (Physical Safety, Emotional Safety, order and discipline safety); academic Climate (Leadership, Teaching and learning, professional development); Community (Relationships, Connected ness,

and respect for diversity and Community partnership); Institutional environment (environmental adequacy, Structural organization and availability of resources) (Loukas, 2007; Wikipedia, the free encyclopedia).

Furthermore, school climate describes the quality of a given school that builds healthy learning places; promotes children's and parents' dreams and aspirations; inspires teachers' creativity and enthusiasm, and encourages all of its members (Freiberg & Stein, 1999); it is based on the teaching and learning practices, experiences and interactions within and outside school community (Homana, Barber, & Torney-Purta, 2006; Cohen, McCabe, Michelli, & Pickeral, 2009; Wikipedia, the free encyclopedia). Moreover, school climate is all about worth and quality of school life. Thus, a school that fulfill the needs for the school climate can make a difference and consequently could have a better outcomes.

Kopperud, Nepomuceno, & Pomerantz, (2012), on the other hand articulated that, School climate is far-reaching term that usually describes a variety of dimensions that characterize the "spirit" of the school. The elements that encompass a school's climate are diverse, ranging from the quality of teacher– student interactions to characteristics of the school's physical and organizational structure, as well as perceived safety, and teaching and learning practices. Moreover, it has been emphasized that, school climate is the interpersonal interactions among the school community that either positively or negatively affects students' cognitive, social and psychological development (Haynes, Emmons, & Ben-Avie, 1997).

School climate can also be described as a complex construct that is recognized as an important variable of effective schools. It is the heart and soul of the school. It is about that essence of a school that leads a child, teacher, an administrator, or staff member to love the school and look forward to being there each school day. School climate is about that quality of a school that helps each individual feel personal worth, dignity, and importance, while simultaneously helping create a sense of belonging to something beyond ourselves (Freiberg & Stein, 1999).

Generally, it is important to note that, ‘no single factor determines a school's climate’. Nevertheless, the interaction of numerous school and classroom issues can produce a fabric of support that allows or enables all members of the school community to teach and learn at best levels (Freiberg, 1998). Although, different researchers define school climate from different perspectives, the researcher considers and pin point to the definition that gives emphasis on collegiality of the principal, teachers professionalism, academic press (the extent to which the school is driven by a quest for excellence) and community engagement of a given school.

2.2. Relationship between school climate and student achievement

The results of emperical researches have shown that School climate plays an important role to student performance, academic achievement and personal growth (Marshall, 2004). The researcher reviewed numerous research studies on the relationship between school climate and student achievement and found that almost all the findings have shown the presence of direct relationship between school climate and student achievement; however, there are some discrepancies with regard to the subscales of school climate in the level of significance (Kwong & Davis, 2015; Freiberg, 1998; Vasquez, 2011; MacNeil, Prater, & Busch, 2009 and Dagnew, 2014; Reynolds, Lee, Turner, Bromhead, & Subasic, 2017).

The major variation in student performance and achievement is due to school climate differences. In this regard, Woldegerima (2014) found that school environment has both positive and negative effect on high school students. More specifically his study revealed that, the higher the schools facilities, the better the probability of the schools to contribute positive effect on students’ behavior and academic achievement. He further showed that, schools with inadequate facility and poor relationships between stake holders produce negative effect on student behavior and achievement. Moreover, if there exist a negative and conflictual relationship between teachers and students in lower grades, the higher is the chance of students that will have behavioral and academic problems in later grades (Hamre & Pianta, 2001). Thus, educators need to pay attention to kids at lower grades to enhance the output and outcome of high school students.

It is not uncommon to see Students in a conducive school climate perform better and become successful than students in an awful school climate. And also, there is an ongoing debate, whether climate should be conceptualized and considered at individual or at the school level. In this regard, Zander (2005) found that school climate affects students' performance at individual and combined level at the same time; he further described that, majority of variance in school climate scores was within the schools. Moreover, individual perceptions of climate were more strongly associated with better student performance than aggregate ratings, particularly students' perceptions of teacher's expectations and school safety. However, this requires further study to arrive at a certain conclusion because of the limited number of litrature on this particular issue.

The performance and achievement of students is determined by the quality of school climate; and yet, responds favorably to positive school climate; however, individual differences matter on the perceptions of school climate (Ellis, 2008). There is a strong relationship between the quality of school climate and academic achievement levels and the achievement was shown to be highly correlated to overall mean school climate (Macneil, Prater and Busch, 2009; Jankens, 2011; Williams, 2016).

2.3. Factors affecting student achievement

Student academic achievement can be affected by various factors such as peer effects (Hanushek, Kain, Markman, & Rivkin, 2003), lack of resources and low SES (Lacour & Tissington, 2011), the effects of teachers (Sanders, Wright, & Horn, 1997), teacher professionalism, collegial leadership, community engagement and academic press (which encompasses schools that set high standards for academic performance set an orderly and serious learning environment and maintains definite standards of performance (Vasquez, 2012 & Abeya, 2017) are some among many factors.

The elements that comprise a school's climate are wide-ranging and complex. As a result, researchers support the following factors that influence school's climate, and consequently student academic achievement. These are: School vision and mission statement, school staff work relationships, lines of communication, principal's behavior

and instructional leadership style, school staff's feeling of trust and respect for leadership(Christensen, Marx, & Stevenson, 2006).

Furthermore, Studies have shown that, schools with poor facilities have negative influence on student achievement; higher levels of control or strict rule also affects the positive effects that student perceptions of safety and their environment had on student success (Kwong and Davis, 2002; Freeiberg, 1998). In fact the study was conducted in developed countries and it is important to do a similar research in developing countries to conclude whether strictness has the same effect or not.

Linares (2012), in his doctoral dissertation entitled ‘effects of school climate and student achievement and discipline behavior in three urban high schools’, found that, there is a negative correlation between student achievement and number of discipline infractions. As the number of major/minor infractions increases, the Math and English test scores decrease. Li & Hasan, (2010) also supported Linares’ finding that School quality and child characteristics are important determinants of academic performance. Moreover, Newport-Berra (2013) had shown the link between student conduct and socio- emotional outcomes strengthen the necessity of school level efforts to promote a positive behavior and prevent bullying, particularly for children coming from low-income families.

A research conducted in secondary schools in Zone ‘A’ Senatorial District of Benue State, in Nigeria had shown that ‘School climate, discipline and physical facilities have significant influence on academic achievement of secondary school students (Oguche et al., 2015). It is obvious that parental involvement has significant contribution for student achievement. In this regard, Collins (2010) found that, parental engagement was most closely related to student’s achievement. Furthermore, ‘Incidents of disorderly conduct and the wellbeing of the students are the best predictors of student achievement’ (Smith, 2005). Student interpersonal relationships affect student school attendance. It has been shown that students at the lower grade levels have a greater perception that teachers treat them fairly and as they grow older this belief drops (Roberts, 2007).

Generally, for a given school to be fruitful, its climate should be conducive for teachers and students in particular and for the community in general. School climate and teachers

motivation are two inseparable things (Asrat, 2015). And moreover, school climate has a relationship with teachers' commitment, (Raman et al., 2015); and, consequently, it affects students' academic achievement.

2.4. **School climate studies**

2.4.1. School

School can be considered as a social meeting place. Despite the fact that, there are slight differences, schools around the world are remarkably similar. The organizational structures of schooling vary only slightly from one country to another. Any School regardless of the quality and availability of its facility or resources, at least should have a group of students with one teacher, fixed times for instruction, set times for starting and stopping the school day and administrative structures that are mostly hierarchical. Students are examined with teacher made test and standardized national or regional examination depending on the modality of countries, is also some universality of schools. Moreover, 'the problems of schooling are also universal: student boredom as evident by lack of attendance (truancy); leaving school before reaching a specified age (dropping out); use of stimulants that diminish participation (drugs, drinking alcohol and tobacco abuse)' (Freiberg, 1996).

2.4.2. The effect of school size on student academic achievement

There are numerous variables that distinguishes one school from another such as: ownership, location, number of students, teacher-student ratio, quality and availability of school facility (resources), parental involvement, disciplinary cases, dropout rates, effectiveness of schools (in terms of student academic achievement), the kind of relationship between and among principals, teachers, students and the community…etc. However, it is important to note that the magnitude of the impact of these variables either positively or negatively on students' academic achievement will not be the same. In general, if all these and other factors were constant, one would expect the same or nearly the same result from each school and that is why variation in students' achievement has been observed among schools which are a worldwide reality.

The number of students in a given school (school size) may affect students' academic performance in different ways. In Addis Ketema sub-city, there were 21elementary (1-8) 3 secondary (9-10) and 2 preparatory (11-12) government schools. There are quite a lot of variations in school size (number of students) among these schools. In the secondary schools, the school size ranges from 1160—2378 students. Literature reviews have indicated that schools can be classified as small, medium or moderate and large size, depending on the number of students. There is no clear and common agreement among researchers and educators about what constitutes a small or a large (Cotton, 1996).The indications are that 300-400 students are an appropriate size for a primary school and 400-800 students for a secondary school. The Chicago Task Force on Small Schools regards small elementary schools as those with enrolments of less than 300. Another study was made on 287 schools in North America; and it has been classified for elementary schools as small fewer than 200 students, medium 400-600 students, and large over 600 students. Sergiovanni (1995) argued that for a given school to be productive, no more than 300 students should be enrolled in either elementary or secondary school. Moreover, (Jones & Ezeife, 2011) concluded that schools with enrollments of 300 to 400 students were optimal for seven reasons, namely: 'governance', 'respect', 'simplicity', 'safety', 'parent involvement', 'accountability' and 'belonging'.

Lee and Smith (1997), in their study found that the school achievement increases for the enrollment levels between 600 and 900 students, in schools less than the lower limit (600) students learn less and in large high schools (more than 2100) learn considerably less. The results of the research findings in all the literature reviewed, seemed reasonable, however, the existing reality in developing countries is something different from this fact. And moreover, the school sizes are much bigger both in Addis Ababa city administration in general and Addis ketema secondary schools in particular than the schools in the literature reviewed. Therefore, further study on the relationship between school size and student achievement based on the existing context will have a paramount importance to arrive at a certain conclusion about school size.

Nevertheless, with all these disparities in size, schools could have big or little or no differences in student achievement due to size differences (Lamdin, 1995; Borland &

Howsen, 2003); on the other hand, the entire reality sometimes on the ground showed that large sized schools even have better students' academic achievement than the smaller ones; it means the disparity is not consistent. In this regard, Breger (2014) found that schools with large size have a significant positive effect on students' academic achievement. On the other hand, (Driscoll, Halcoussis, & Svorny, 2003), argued that not only school and class size but also school district size hinders students achievement.
But, a study performed in Ontario, Canada on 541 elementary schools, the overall result showed that there was no statistically significant correlation between school size and student achievement. In fact, the study was performed at different levels (levels 1, 2, 3 and 4) within the same grade level, and as the level increases, certainly, there were significant correlations with respect to levels of performance in both Grades three and six in some curricular areas (Jones & Ezeife, 2011)). However, the school size in developed countries is quite different from developing countries like Ethiopia and this may cause result disparity on the study performed in these two different situations.

Bullard (2011), in his study on the effects of large versus small school size, he found out that school size has a 'small, but not substantive effect' on the academic achievement of students. On the other hand, Oredein & Oredein (2016) found that small school size has a statistical significant effect on student academic performance. He further explained that in a school of smaller size, teachers will get the opportunity to closely and individually mentor and can boost of quality education to each student in a 'small class compared to a large class in which the teacher himself will fail to find his bearing or may even be intimidated by such crowd'. However, here, the concept of class size and school size was mixed and interpreted wrongly. Besides, small size couldn't be the only guarantee for boosting of quality education for the fact that there are many other factors to ensure quality education; furthermore, large school size doesn't mean large class size, since a given school with large school size, may have small or moderate class size, what matters is the availability of classrooms and the number of teachers.

Roeder (2002) insisted that poverty was the major factor in the student achievement than size relationship. The socioeconomic status and other variables may have affected the results of studies on the relationship between school size and student achievement. As to

the knowledge of the researcher, in Ethiopia, there are no studies made on the relationship between school size and student performance. Therefore, further studies are required.

Among a number of studies in developed countries the one which is to some extent close to the Ethiopian context is the school size between 600 to 900 students. In reviewing the literature, it has been shown that school sizes below the lower boundary (600 students) learn less, and beyond the upper boundary (900 students) also learn less and even considerably less when the school size exceeds 2100. On the other hand, the school size of Efoyta and Dilachin was 1160 and 1787 respectively. The size of Efoyta and Dilachin exceeds by 360 and 887 students from the upper boundary respectively. However, the academic performance of students in Dilachin on EGSLCE was significantly better than Efoyta, which is in line with Gardner, Ritblatt, & Beatty (1999) finding, which shows that Students in large school size had higher academic achievement.

2.4.3. Climate as a Metaphor

How does a school principal, teachers, staffs, and the community perceive school climate of a given school? What are the parameters or variables used to study school climate? Do all researchers use or apply similar variable/s/, design, and method of analysis to arrive at the same or almost the same conclusion? Therefore, all stakeholders should have the right notion about school climate so as to act accordingly. Freiberg has given the following description about climate of a given school.

> If I say "School climate, what is the first word that comes to your mind?" the usual word association from educators is "feel", "well-being", "health", "learning environment", "safety", (both physical and psychological) "openness", and "caring" within schools and classrooms……. When defining the climate of a school we tend to use metaphors similar to the descriptions listed above. A school is not an organic being in the biological sense but it does have the qualities of a living organism in the organizational and cultural sense. The physical structure of schools can have direct influences on the health of individuals who work and learn there. The amount of light,

> noise, chemicals, and air quality are part of most work environments—schools are no different. Beyond the physical nature of schools there are other elements that reflect the way people interact and this interaction produces a social fabric that infuses the working and learning condition' (Freiberg, in press). And thus, everyone who expends more time in schools I realizes how one school can feel different from other schools. School climate is a general term that refers to the feel, atmosphere, or setting of a school. Just as individuals have personalities, so too do schools; a school climate may be thought of as the personality of a school.

Therefore, to have a school with such climate, principals and other stake holders need to work hard cooperatively.

2.4.4. Improving the school climate

Researchers have suggested that, school climate can be improved focusing on four major areas. These are: safety, relationships, teaching and learning, and the external environment (Dary & Pickeral, 2013). A growing body of research has indicated that, improving school climate, and consequently school outcome is the major concern of nations in the world now days.

Tschannen-Moran, Tschannen-Moran (2011) conducted a research on how to improve school climate focusing on strengths through appreciative inquiry to confirm that, whether appreciative inquiry is related to measure changes in school climate and trust within a school. Through the process three areas of inquiry had been identified; namely: student achievement and success, trust and respect, and community pride & involvement. The finding showed that a significant improvement was shown.

They further indicated that, 'Having designed strategies for moving forward, it is time to innovate those strategies into being. Destiny in an appreciative inquiry organization is not about implementing designs as though they were mandates from the design process; destiny is about empowering people to experiment with and improve on their designs by trying them out and making situation-specific, real-time adjustments that reinforce what

works. Such experiment progressively generates new solutions and expands the realm of the possible, like ripples in a pond. When the spirit of appreciative inquiry is fully realized in a school, educators become more willing and able celebrate and build on their strengths. They become the subjects, rather than the objects of change to realize the destiny of their schools as learning organizations. That is the cultural shift and orientation made possible by appreciative inquiry. BY orienting people around the positive, appreciative inquiry enables an organization to generate positive actions and outcomes that become self-reinforcing (Watkins & Mohr, 2001)' cited in Tschannen-Moran, Tschannen-moran (2011).

In Ethiopia, for the last ten years, different reforms and programs initiative such as: SIP, TDP, BPR, BSC, ESDP I-V …etc) have been implemented by ministry of education nationwide and regional education bureau in their respective regions so as to improve the learning outcomes. However, the required change or improvement has not yet been achieved.

Student perception of school climate may be affected by various factors. Such as: the age, sex and even the area where that particular student is coming from. Milam (2014) found that, students view or perception of school climate 'strongly relate' to student behavior or vary extensively based on student characteristics. Specifically gender, achievement levels …etc. relate to the sub-scales of school climate. And therefore, understanding these differences have a paramount importance to target improvement.

Educators always need schools to show improvement; and thus, to be successful, continuous and timely information about the learner and the learning environment is indispensable. In this regard, to improving the school climate and so does student achievement; Freiberg and Stein (1998) have suggested principals or school directors to ask the following five questions.

The questions are:

> (i) Start with your senses and ask yourself: How does the school look, smell, feel yes [see] and taste—would I eat in the student cafeteria? (ii) What direct and indirect climate measures can be used to help document and create a base-line for change? (iii) What initial climate changes can

> we make that would have the highest visibility and be accomplished in the shortest period of time (e.g. a few weeks)? (iv) What groups or individuals should be involved to encourage and create an environment for sustainable school climate improvements? (v) What long-term changes are needed to create a healthy environment for all members of the learning community?

In this regard the Ethiopian ministry of education applies the general education inspection data collecting tools as a standard that focus on input, process and output to measure the levels of performance of the schools (MOE, 2013). According to this inspection standard, a school that scored 50% to 69.99% called level 2 which means doesn't fulfill the standard and needs to be supported; 70% to 89.99% called level 3, almost fulfilled the standard, but still needs some support, 90% to 100%, level 4, completely fulfilled the standard and furthermore, it could be center of excellence, however a school below 50% should not be allowed to continue, regardless of the reality on the ground.

Furthermore, all schools are expected to perform internal inspection by themselves, by making use of SIP questionnaire analysis which is collected from teachers, students and parents every year so as to know the level of performance of the schools (MOE, 2008). This is how stake holders will have information about the school's performance and enable them to make some corrective measure/s/ with the hope that, the schools will show improvement.

However, once the school climate has been improved from unhealthy to healthy school climate, the challenge here is the question of sustainability. From the researcher experience, one of the biggest challenges faced by Addis Ababa Education Bureau in general and Addis Ketema sub-city in particular is the irregularity of the schools performance level. That is, a school which was say for instance, at level 3 in the given academic year, will be deteriorated to level 2 or level 1in the upcoming years for various reasons and vice versa without consistency.

The other challenge of the sector observed so far is, the mismatch between the school's levels of performance (inspection value, levels 1-4) and the difference in the levels of

students achievement. As already mentioned above, schools are evaluated either internally or externally, and it is obvious and natural that, schools with 'better standard' /high level of performance/ (which is based on the inspections value), would have high student performance and hence high student achievement. However, what has been observed on the ground so far is not in line with this assumption. According to the researcher's observation, the instrument used to measure the levels of school's performance or the one who perform the inspection or the process of inspection by itself may have some gaps; nevertheless, this is not the focus of this study, the issue needs special attention by educators any way.

Sustaining a healthy learning environment may take as much effort and care as improving an unhealthy one. Regarding this point, Freiberg and Stein, also provide advice to school leaders/principals/ to ask three important questions to confirm sustainability of school climate that leads to consistent and sustainable development of student achievement.
The questions are given as follows:

> '(i) What factors enabled us to create a healthy learning environment? (ii) Have there been any changes that would require adjustments in order to sustain the environment? (iii) What is my personal commitment to sustaining a healthy learning and working environment?'
>
> Therefore, the above questions reflect the need to determine (i) 'How did we get here?' (ii) 'What changes have occurred since and what adjustments are needed?' and (iii) 'What is my role in sustaining a healthy learning environment?' There could be additional questions to be asked for sure, nonetheless, a starting point is basic to decide 'where we have started', and 'where are we now 'and 'where are we going?'

The above questions clearly signifies that, the school community in general and the school principal/ management in particular, should recognize every members of the school community as it is equally important and should keep up their

activity, consciously observe the progress or failure of the school inorder to make sure that there is sustainable improvement.

In Addis Ababa city administration, all the government schools are supposed to have a 3 years strategic plan and an annual plan which is derived from this strategic plan. The principals need to gather every information about the schools' weakness and strengths from stake holders (teachers, students and parents) using data collecting tools to prepare these plans; then, analyze and interpret the data to identify the status of the school and act accordingly. Here the challenge is how many of the school principals perform the analyses based on scientific procedures and act accordingly?

From the researcher's experience, yet, there are principals who used direct copy of some other schools' plan whose context is totally different from the school he/she leads. It has been suggested that, the survey needs to address the school climate and, based on that, administrators should determine the current condition and decide whether the work environment or overall school climate needs to be checked or maintained, or whether it needs intensive care (Keefe and Kelley, 1990). A growing body of empirical research indicates that, making even small changes in schools and classrooms can lead to substantial improvements in climate (Freiberg, 1998).

Generally, research shows that school climate do affect the community within and outside the schools. Consequently, it ha been suggested that positive interpersonal relationships and optimal learning opportunities in all demographic environments can increase school achievement levels and reduce maladaptive behaviors (McEvoy & Welker, 2000).

2.5. School climate versus principals/directors/

In Ethiopoa, there is one saying, which says, 'a school looks like its principal'. In this regard, Robert (2005) found that 'teachers' perceptions of their principals' effectiveness are related to school climate'. However, theorists in education on the other hand have reported that the impact of principals on the teaching and learning process is mediated through the school climate and culture, and doesn't have a direct effect (Hallinger & Heck, 1998).

Ziolkowiski (2015) performed a qualitative study on four elementary school climate to explore the action the principals take to create or maintain a positive school climate for teachers and teachers' perceptions of those efforts. The finding has shown that, three of the four schools indicated discrepancies between perceptions of the participating principals and teachers.

Although participant teachers in the three schools acknowledged and appreciated the effort made by the principals, they do not identify or qualify the extent to which the principals' efforts contribute to the school climate. On the other hand, participants of the fourth school shared perceptions indicated that the effort of the principals had created a positive school climate. As to the researcher's opinion, if the research had encompassed student's academic achievement, it would have shown a full picture of the difference between the principals' contributions to the positive school climate. Contrary to the above findings, Temesgen (2017) in his study on 'the aassessment of School Climate and its implication on teachers' motivation in Secondary Schools of Akaki Kality Sub City, found that, principals /school leaders/ are not in a position to create conducive learning environment; and it should be noted that, it is the principal who should take the lion share of the responsibility in creating favorable condition for a given school.

As to the knowledge of the researcher, school principals in Addis Ababa City Administration, including Addis Ketema sub-city secondary schools, do have awareness about school improvement program (SIP), may be except thoes who recently joined to the system. This program has four major components and these are teaching & learning, school administration, community participation and conducive school environment. So, one of the main duty of principals is creating conducive school environment; nevertheless, it is not possible to make sure the extent to which these principals are working to improving the school climate and hence the student achievement; because the reality on the ground is something different.

However, the duties of principals are by far beyond and are expected to create an orderly and friendly environment. Such situation will motivate teachers to provide the maximum possible support to their students. Professional teachers needs to show 'exemplary behavior and attitude' everywhere to the students and to their colleagues (Tanag and Abu,

2014). However, teachers as professionals will perform their job efficiently and effectively, only if there exist an appropriate system and inviting working atmosphere. Therefore, it is the responsibility of the government in general and the principal in particular to create such positive working environment for teachers.

Scallion, (2010) on the other hand found that, principals had an understanding of school climate while involving in coursework, extensive professional development or reading professional literature consistently. And therefore, he/she has possessed an understanding about school climate and should strive to change it. However, many of the principals in Addis Ababa secondary schools, though, there is a system for professional development, majority of the principals do not practice it and are always busy with routine activities which do not contribute much to changing the school climate and student achievement.

Carl Rogers (known to be one of the founders of humanistic psychology) in personal Communication with Freiberg several years ago cited in H.Jerme Freiberg and T.A.Sten (1984) very much pleased the researcher, and decides it to be part of the review literature, and is given as follows:

> I work every day in my garden. The roses, flowers, and plants do well…… I am aware that weeds are always present. It is the constant caring that prevents the weeds from taking over the garden. Person-centered education is much like my rose garden—it needs a caring environment to sustain its beauty. Sustaining a healthy learning environment may take as much effort and care as improving an unhealthy one.

The conversation between the two guys was very important. A summarized lesson was conveyed to all educators; that is , school climate is not something created by one shot activity or will not be remained good/healthy/ without sustained and continuous work by the stake holders in general and principals/school leaders/ in particular. Furthermore, Freiberg (1999) revealed that, for more than a century, the educational community has had a great concern for the school climate and its effect on student and learning environment.

2.6. Healthy school climate

Researchers suggested that the success of students is affected by various factors; whatsoever the case numerous research findings have confirmed that healthy school climate and student achievement are related (Eliss, 2008; Jankens, 2011; Macneil, Parter and Burch, 2009). Moreover, it has been revealed that strong relationship among school community is a manifestation of positive school climate. In a positive school climate, students and staff are caring, respectful, and committed to their communities; in such schools, these important values live and breathe without any external pressure and each member of the school community is more likely to have positive relationships and help each other. A positive school climate helps people feel socially, emotionally and physically safe in schools (Weissbourd, Bouffard and Jones, 2013; Kappan, 1987; Wikipedia, the free encyclopaedia).

Researchers have demonstrated that positive school climate is linked with student engagement in school, academic achievement and positive social development. Furthermore, studies have shown the existence of significant difference in student achievement between schools with positive school climate and school with unhealthy or poor school climate (www. Gadoe.org).

Additionally, teachers ‘set high but achievable goals’ for students, retain ‘high standards of performance’, and ‘promote a serious and orderly learning environment’. Furthermore, students are engaged in their school work, are ‘highly motivated’ and respect other high achieving students. Finally, in healthy schools, teachers ‘like each other’, ‘trust each other’, are eager about their work, and recognized positively by the school. Teachers are very much proud of their school (Hoy et al. 1990).

2.7. Unhealthy School Climate

It is very simple to understand the general conditions of unhealthy schools climate, because it is enough to look at the opposite aspects of healthy school climate. Many researchers have suggested that school leaders or principals play important roles in creating conducive school environment (Gülşen & Gülenay, 2014).

Unhealthy schools lack an effective leader and the teachers become unhappy with their task and colleagues (Hoy and Tarter, 1997) cited in (Mac Neil Prater, & Busch, 2009). As a result, these schools have become deterred in their mission and goals by stake holders. Furthermore, such schools with unhealthy climate faced unnecessary interference from every directions and being unable to obey its mission in every day activity. In such schools, there is little support among and between the school community; and it can be said that, the communication between the school leaders and teachers is either very low or broken. This in turn creates deteriorating staff self-confidence and teachers don't feel good about their jobs and the organization /school / where they are working in. They become nervous and act unfriendly, distrustful, and self-protective

In Addis Ababa City Administration Education Bureau, currently there is one school principal/director/ and three vice directors. Educational experts argued that increasing the number of principals does nothing to the teaching learning process; rather they became the center of dispute in the schools. Furthermore, it is not uncommon to see different disagreements among these school directors for many reasons and hence, most of the schools in Addis Ababa City Administration have unhealthy school climate; this is evidenced by supervisors of the City Administration Education Bureau and from the researcher's daily experience. Moreover, most schools perform their daily activities in a much disorganized way, business as usual, teachers and students are not motivated; and the schools in general are not effective for the fact that the students' achievement is not satisfactory.

It is obvious that the school's proficiency will be maximized whenever appropriate teaching learning environment exists; and this could possibly happen by efficient principals who are friendly with teachers. Teachers achieved professional status and effective professional learning activities are supporting with accountability bureaucratic system of local and central government through the policy of welfare and facilities based on their needs (Tanag and Abu, 2014).

2.8. School Climate and Student Achievement

Researchers almost all over the world commonly agreed that student achievement is affected by school climate; however, there are some disparities in using climate variables and designs in studying the school climate. Irrespective of how it has been defined over the years, to a greater or lesser extent, all research on school climate finds a positive correlation between better school climate and improved student learning and achievement.

Unsecured, declined and stuffed schools threaten the chances that students will develop social values of integrity, discipline, and enthusiasm for life-long learning. Overpopulation reduces students' ability to pay attention and achieve academically. Disciplinary climate is one of the most important factors related to student achievement; this could be as a result of some fundamental descriptive factors such as disorganized teaching or absence of classroom management. On the other hand, adjusting the interaction between teacher and students to include small group discussions, individualized instruction, and applying numerous ways of displaying knowledge motivate student learning and consequently enhance student achievement (Sortkaer and Reimer, 2016).

2.9. **Why Does School Climate Matter?**

Student achievement can be affected by a number of factors such as socio-economic status (SES), parents educational back ground, commitment of teachers, student motivation, school facilities and above all the general climate of the schools matters. In this regard, the National School Climate Council (2013) found that '"over the last two decades, there has been a growing appreciation that school climate, the quality and character of school life, fosters or undermines children's development, learning and achievement. Research confirms what teachers and parents have claimed for decades: a safe and supportive school environment, in which students have positive social relationships and are respected, engaged in their work and feel competent, matters. A growing number of reports, studies and legislation emphasize the importance of positive school climate in reducing achievement inequities, enhancing healthy development and

promoting the skills, knowledge and dispositions that provide the foundation for 21st century school and life success"'.

Furthermore, it has been explained that, Students in a healthy school climate show willingness to participate in different activities; like involving in varieties of clubs, playing games, enhanced 'academic motivation and school connectedness' develop progressive attitude towards learning and problem solving skills are some of the indicators for students in a positive school climate; and a positive school climate has a strong relationship to students' academic achievement (Kopperud, Nepomuceno, & Pomerantz, 2012; A. Jones & Shindler, 2016).

Moreover, (Freiberg and Stein, in press) described that 'School climate is the heart and soul of a school. It is about that essence of a school that leads a child, a teacher, an administrator, a staff member to love the school and to look forward to being there each school day. School Climate is about that quality of a school that helps each individual feel personal worth, dignity and importance, while simultaneously helping create a sense of belonging to something beyond ourselves. The climate of a school can foster resilience or become a risk factor in the lives of people who work and learn in a place called school'. This is how school climate plays a vital role for the success or failure of a school in general and students in particular; and therefore educators need to give due attention to school climate of a given school.

2.10. Teachers' and Students' View of School Climate

As principals are the main actors in creating an orderly, friendly and positive school environment, directly or indirectly, teachers too can play an important and significant role to evolve positive school climate. In this regard Krmaz (2006) found that 'teachers play an important role in developing a robust school vision. It has been found that there is a significant positive relationship between teachers' perceptions of organizational health and the relative robustness of their school vision. Subsequent regression analysis indicates that collegial leadership and academic emphasis and resource support were the school health themes that characterized an overall association with robust school vision'.

As far as teaching–learning process and its effectiveness is concerned, it is imperative to consider the perceptions of teachers and students on school climate. Numerous researches were conducted on the perceptions of teachers and students about the general school climate and educational emphasis. It has been described that the perceptions of teachers on school climate were more susceptible to classroom-level factors, such as '"poor classroom management and proportion of students with disruptive behaviors,"' whereas students' perceptions were more sensitive to school-level factors, such as '"student mobility, student-teacher relationships, and principal turnover"' (Mitchell, Bradshaw, & Leaf, 2010) cited in Thapa and Cohen(2013). Additionally, the perceptions of students towards teachers' support and the support among students had been associated with youngsters' self-worth (Jia et al., 2009).

A growing body of research has been conducted on different issues of school climate and its effect on student achievement; it was shown that there exists a relationship between school climate and student achievement. Plucker (1998) had briefly explained the presence of numerous research reports on the ambition of students to various educational outcomes; such as 'aspirations are related to several educational outcomes, including academic performance, affective health, attrition, and leadership skills'. Furthermore, he found that, students with high inspiration and ambition perceived a more supportive school climate than the students with low aspirations did. However, the challenge here is, how can the students be inspired? Among the various motivating factors, it is believed that, the school climate will take the lions share for students' inspiration; and thus, the school principals along with the stake holders should try to create a positive school climate.

CHAPTER THREE

RESEARCH DESIGN AND METHODS

This chapter deals with the design of the study, population of the study, the sampling techniques employed in the study, data gathering instruments, procedures of data collection, and issues related to analysis of the data.

3.1. Design of the Study

In this study, there was an interest in the variables of school climate and student achievement. Correlational design was employed to determine if any relationship exists between the two variables.

Students' EGSLCE result and the school climate index including the sub-scales are the dependent and independent variables respectively. Therefore, the study was to show the relationship between the dependent and independent variables. In doing so, the performance of students in the two sample schools may be compared to explore the effect of school climate on students' performance; and therefore, it is important to note that the intention of the comparison was not actually to compare and contrast the performance of students in the two schools; rather, it is to further confirm how the school climate index and its sub-scales affect students' achievement. In this research design, the researcher used different statistical tests to describe and measure the degree of relationship between the dependent and independent variables. Moreover, correlational research allows for the analysis of multiple variables in one study (Creswell, 2012).

3.2. Study area and population

Addis-Ketema is one of the 10 sub-cities of Addis Ababa City administration. It is located in the north-western area of the city and bordered by four sub-cities. That is, it borders with the sub-cities of Kolfe-keranio in the west, Lideta in the South, Arada in the East and Gulele in the North.

According to the 2011 population census Addis - Ketema sub-city's population was 271,664 with an area of 8.64 square kilometer. In this sub-city there were four

government secondary schools namely: Yekatit 23, Efoita, Dilachin and Abisynia; and in 2017/2018 academic year, there are only 3 government secondary schools; this is because Dilachin has been already promoted to preparatory school. However, since this research is based on the result of grade 10 students in 2016/2017 academic year, Dilachin is included in the study. The target population of the study comprises of teachers who were teaching in the aforementioned secondary schools.

3.3. Sample size and Sampling Techniques

In Addis - Ketema sub-city secondary schools, 3128 grade nine, 3377 grade ten and a total of 6,505 students, and 427 teachers were involved in the teaching-learning activities in 2016/17 academic year. The number of teachers and students vary from school to school.

Purposive sampling technique was employed for selecting sample from the 10 sub-Cities; and accordingly, Addis Ketema sub-City was selected. Dilachin and Efoita (50%) of the secondary schools were selected randomly.

There were 78 male and 32 female teachers in Dilachin, and 55 male and 30 female teachers in Efoita secondary school. In total, 195 teachers were employed in these two secondary schools. The researcher had taken all 195 (100%) of the teachers who were teaching in the sample schools to fill the questionnaire.

3.4. Data Gathering Instruments

This section describes the data collecting instrument that was used to gather information from the sample schools.

3.4.1. School climate Index (SCI) Questionnaire

In this study, School Climate Index (SCI) questionnaire which was developed by Tschannen Moran, Parish and Dipaola (2006) was used as data gathering tool. These authors developed the school Climate Index (SCI) as a consolidated framework by combining the elements of Organizational Climate Descriptive Questionnaire (OCDQ) used to measure the openness of schools (developed by Hoy & Sabo, 1998; Hoy, Tarter

& Kottkamp, 1991) and elements of Organizational Health Inventory (OHI) used to measure the health of schools (developed by Hoy and Feldman, 1987). From the 12 dimensions of the two frameworks, four strong dimensions were developed. These are: collegial leadership, teacher professionalism, academic press, and community engagement. Accordingly, the SCI was used as the primary instrument to gather information on the perceptions of teachers in the sample secondary schools to measure how conducive the school climates of the schools in total and in particular. This instrument contains 30 Likert-type items with a 5-point scale in which the response choices include a great deal, quite a bit, some degree, very little and none at all.

3.4.2. **Ddocument analysis (Archival data)**

Grade 10 Ethiopian general education school leaving certificate examination (EGESLCE) students' result of the sample schools (Dilachine and Efoita) in 2016/17 academic year was used to check the relationship between school climate and student achievement.

3.4.3. Distribution and Collection of (SCI) Questionnaire

In order to collect all the necessary information that enable the researcher to arrive at the correct conclusion, the Questionnaire must be pilot tested and some adjustment has to be made. Accordingly, a pilot study of the questionnaire was conducted using purposive sampling of one secondary school which is similar to the ones included in the study. For the pilot test 34 copies of the questionnaire were distributed randomly to 34 teachers. After rating, 30 questionnaires were collected. At the time of collection, the researcher has interviewed some of the respondent teachers about the clarity of each question to insure if it is valid. Fortunately, all the interviewees were replied as no need of translation in to Amharic is required for the fact that it is very clear and the respondents are secondary school teachers. However, they informed the researcher that very few questions like questions 26 and 27 need some modification. Generally, very constructive comments were obtained on some of the questions that need improvement. Based on comments collected, the researcher made slight modifications on questions 7 & 8 of part I; questions 9, 14, 18, 21 and 30 of part II; and major modification on questions 26 and 27. For this study, sample reliability of the instrument was evaluated using the cronbach alpha coefficient of internal consistency. The Cronbach alpha reliability coefficient for the total instrument was 0.934 and 0.942 for the pilot test and for the main study

respectively indicating the instrument was reliable. Since analysis of data for this study was involved by categorizing the instrument items into subscales (CL, CE, AP, TP), reliability coefficients were also found for the subscales and the results obtained for both (pilot test and the main study) were given in table 1 below.

Table 1

Cronbach's alpha for SCI and the number of Items measured

SCI- sub scales	Cronbach's alpha		No of items
	Pilot study	main study	
Collegial leadership	0.784	0.852	1, 5, 8,12, 16, 22, 29 = 7
Community engagement	0.809	0.854	2, 7, 9,15,17, 20, 23, 28 = 8
Academic press	0.773	0.812	3, 6, 10, 14, 18, 25, 26, = 7
Teachers professionalism	0.842	0.817	4, 11, 13, 19, 21, 24, 27, 30 = 8
Total scale	0.934	0.942	30

The reliability coefficients obtained both in the pilot and main studies were reasonably good or high.

After performing the pilot test, 195 questionnaires were distributed to 195 teachers. Among these, 160(82%) completed questionnaire copies were returned, 30(15.4%) were not rated and 5(2.56%) copies were with incomplete information and were rejected; and thus 155(79.49%) were considered.

Regarding the student population, in 2016/2017 academic year, there were 2099 grade 10 students who were learning in the four secondary schools of Addis ketema sub-city, and had taken grade 10 national examinations. One thousand three hundred fifty four (64.5%) of this population were involved in the study. Note that these 1354 students were belongs to Dilachin and Efoyta secondary schools which are the sample schools for the study.

3.5. Methods and Procedures of Data Analysis

After collecting all the necessary data, the researcher started to interpret and analyze the results of the questionnaire. To do so, the items of the questionnaire were codded and

recorded in tables which enable the researcher answer the basic questions of the study. The analysis was made using the Statistical Package for Social Sciences (SPSS) Version 23.

Likert-type rating scales with the five indicators (a great deal=5, quite a bit = 4, some degree =3, very little =2 and none at all =1) and the responses of the respondents were rated based on this scale. The interpretation of this measurement scales were done by quantifying values of variables numerically using interval scale. Descriptive statistics like frequency, measures of central tendencies such as mean and standard deviation; inferential statistics like one sample t-tests, independent sample t-test and two- way ANOVA were used.

3.6. Ethical Considerations

A request was made to the two secondary schools to get permission to conduct the study. The researcher contacted the school principals through phone first and then physically to explain the purpose of the study. In other words, informed consent and confidentiality of the respondents were secured. Staff meeting was chosen as an appropriate condition to discuss and dispatch the questionnaire. In this study, the researcher respected the rights of respondents and organizations as well as the ethical principles that have to be followed in conducting research to decide whether to participate in a study or not. The researcher gave instructions to the participants how to complete the questionnaire.

In dealing with the respondents, the participants of the study were fully informed about the purpose of the study and permission was requested from the respondents prior to gathering the information. The dignity, privacy and confidentiality were assured since these are the basic ethical aspects in any research activities in order to get relevant and appropriate data. Respondents were treated fairly and equally before, during and after their participation in the study; in addition the researcher conveys his acknowledgement to the respondents and thanks them for their cooperation. The information collected during the process of the study was kept in strict confidentiality. Anything against the will and dignity of the respondents were avoided throughout the study.

CHAPTER FOUR

PRESENTATION, DATA ANALYSIS AND INTERPRETATION

This chapter deals with presentation, analysis and interpretation of data collected from two secondary school teachers. The necessary data for this study were obtained through SCI questionnaire and archival data. SCI questionnaire were distributed for 195 respondents. 160 (82%) copies of the questionnaire were collected but 5(2.56%) were not rated properly and hence rejected; on the other hand, 30(15.4%) copies of the questionnaire were not collected. Overall, the response rate was 155 (79.49%). The next step is to organize and analyze the collected data using tables, frequency counts, mean, range, standard deviation, descriptive statistics and inferential statistics using SPSS version 23 was used so as to answer the basic questions.

Identifying and studying the variables surrounding the school environment and the factors that contribute to student learning is the topic of this research study. Although school climate is a complex, multi-dimensional phenomenon, which influences many aspects of the school and the greater community in which it resides (Marshall, 2004), its importance on the school environment and its relationship to student outcomes are of interest to this research. Additionally, having empirical evidence surrounding the association school climate has with student achievement, specifically the amount of growth a student makes through the course of a school year, can provide the field of education with valuable data to inform decisions and improve the quality of education for a countless number of students (Freiberg, 1999).

4.1. **Characteristics of Respondents**

The respondents' demographic information is summarized in the Tables below.

Table 2

Demographic characteristics of Respondents

Variables		N	%
Sex	Male	106	68.8
	Female	48	31.2
	Total	154	100
Age	20-25	5	3.31
	26-30	90	59.60
	31-35	28	18.54
	36-40	14	9.27
	41-45	3	1.99
	46 -50	6	3.97
	51and above	5	3.31
	Total	151	100
Educational level	Dip	19	12.50
	BED/BSC	115	75.66
	MA/MSC	18	11.84
	Total	152	100

Table 2 shows that the numbers of female teachers were smaller than males; and teachers in the sample secondary schools were dominated by males. Moreover, descriptive statistics in SPSS analysis revealed that 23 and 59 years were the minimum and maximum ages of participant teachers, and 31.9 years being the mean age (SD = 6.96).

Regarding the education system all the secondary schools are expected to be covered by minimum qualification of first degree; however, 12.5% of teachers were not fulfilled the standard and this might have a negative effect on student achievement.

Table 3

Demographic characteristics of Respondents

Variables		N	%
Work experience in teaching /in years/	1–5	35	23.49
	6–10	76	51.00
	11–15	22	14.77
	16–20	4	2.68
	21–25	5	3.36
	26–30	4	2.68
	31–35	2	1.34
	36–40	1	0.67
	Total	149	100
Teaching grade levels	Grade 9	23	18.7
	Grade 10	20	16.3
	Grades 9 & 10	17	13.80
	Others	63	51.20
	Total	123	100
Teaching load (peri-od)/week	2–5	2	1.3
	6–10	29	19.2
	11–15	112	74.2
	16–20	8	5.3
	Total	151	100

Table 3 shows the number of respondents with their corresponding experiences in teaching, the grade levels they are teaching and teaching load teachers have per week. As far as teaching grade levels is concerned, 63(51.2%) of the teachers were involved in 'others' option. This is because; one of the sample schools which were included in the study was promoted to preparatory school (grade 11 &12) in 2017/2018 academic year. Therefore some of the teachers were teaching in either grades 9 and 11 or grades 10 and 12 or grades 11 and 12. The study was designed to involve all of the teachers working in the sample schools to make sure that it reasonably represents the population of the study; and that is why 51.2% of the respondents rated in 'others' option.

The Ethiopian Ministry of Education has allocated periods per week for each grade levels and each subjects. Moreover, the total periods per week for grades 1-4 & 5-8 are 30 periods and for grades 9-10 & 11-12 are 35 periods respectively (MOE, 2010).

Table 4

Number of periods allotted to each subject per week for grades 9 & 10

Subject	Grade 9	Grade 10
Amharic	2	2
English	5	5
Mathematics	5	5
Physics	4	4
Chemistry	4	4
Biology	4	4
Geography	2	2
History	2	2
Civics & ethical education	3	3
Information communications technology	2	2
H.P.E	2	2
Total periods/week	35	35

Source: Curriculum Framework for Ethiopian Education (KG—Grade 12), 2010

Table 4 shows the number of periods allocated to each subject that ranges from 2–5 periods per subject per week. No single teacher had loads more than 18 periods. Moreover, descriptive statistics was performed to know the average load of teachers per week, and the result revealed that the average load of teachers was 12.5 periods with a standard deviation of 2.5. From this result one can easily deduce that teachers in these secondary schools didn't have big load and hence, have enough time to support students in co-curricular activities so that their achievement could be possibly improved.

Research question 1: How conducive is the school climate?

In examining the school climate, the researcher used school climate questionnaire to gather teachers' perception. The mean scores of the major variables involved in the study of the sample schools were examined. The variables that measured the school climate index were rated on five point-scales (one to five) with a score of one indicates the least conducive and a sore of five indicates the most conducive school climate. Then the mean scores were computed for the two sample schools and then compared with the value 4 (which is "quite a bit ") to indicate how conducive is the SCI of the schools as perceived by teachers. If the mean score of the SCI was equal or greater than 4 (which is "quite a bit") the researcher assumed that the school climate was positive and vice versa. The mean scores for EGSLCE of the schools were obtained by averaging 5 subjects the students took on grade 10 national examination. The EGSLCE mean score was computed for each subject to the two sample schools separately, and then, the total EGSLCE mean score of the two schools in total. According to the Ethiopia education and training policy, the score of 50 percent and above is considered as a pass mark. Accordingly, in this study 2 (50%) out of 4 (100%) EGSLCE score is considered as a pass mark (mean or average score).

It is important to note that the focus of this study is on the aggregate, the collective perceptions of school climate but not individual perceptions. Hoy and Sabo (1998) reminded researchers that the unit of analysis in school climate studies should be the school and not individuals because the variables being studied reflect organizational properties. In light of this, the school was considered the unit of analysis. Organizational climate is a description of the school and not of the individuals in the school. Similarly, academic achievement was calculated at the school level and not at the individual student level. The dependent variable (EGSLCE), the independent variable (SCI) and its sub-scales were analyzed and compared with the EGSLCE mean score at the school level. Accordingly, the school climate index and the sub-scales for the two sample schools were computed separately.

Table 5

Descriptive statistics for the variables in the study

School	CL	TP	AP	CE	SCI	EGSLCE
Dilachin	3.70	3.93	3.65	3.40	3.67	2.22
Efoyta	3.30	3.51	3.19	3.04	3.26	2.13

As seen in table 5, the mean score for the school climate index showed that both schools (Dilachin and Efoyta) had scored below 4 (which is 'quite a bit'). Regarding the EGSLCE examination results, both schools had scored above the mean (2.00) except physics.

Table 6

Mean and standard deviation of the school climate as perceived by teachers by school

School	N	Mean	St. Deviation
Dilachin	105	3.67	0.58
Efoyta	50	3.26	0.67
Overall (Dilachin &	155	3.54	0.64

The two sample schools have SCI values less than 4 (which is ''quite a bit'') and thus, the researcher assumed that, the sample schools have poor school climate as perceived by teachers (Table 6).

Furthermore, a one sample t-test was conducted and compared with the test value 4 to confirm whether the school climate index is statistically significant or not. The result showed that the school climate in both schools is poor and the difference was statistically significant (Dilachin, df = 104, t= -5.829, p = .000) and that of Efoyta, df = 49, t = -7.793, p = .000). Moreover, the result indicate that the overall SCI was also less than the test value 4 (which is 'quite a bit') and statistically significant (df = 154, t = -9.013, p = .000).

Additionally, independent t-test was conducted to explore the independent effect of the school climate factors /sub-scales/ on the school climate of the two schools explicitly, and the result is shown in the table below.

Table 7

Descriptive Statistics on Teachers' Perception of the School Climate (Scale and Subscales)

	School	N	Mean	Std. Deviation	t	P
Collegial leadership	Dilachin	105	3.70	.78324	3.007	.003
	Efoita	50	3.30	.71304		
Teacher professionalism	Dilachin	105	3.93	.60770	3.817	.000
	Efoita	50	3.51	.71377		
Academic press	Dilachin	105	3.65	.63418	4.029	.000
	Efoita	50	3.19	.74842		
Community engagement	Dilachin	105	3.40	.69482	2.893	.004
	Efoita	50	3.04	.77534		
SCI	Dilachin	105	3.67	.57646	3.916	.000
	Efoita	50	3.26	.66844		

The result of the independent t-test showed that the mean difference between the total school climate and the school climate sub-scales were statistically significant. Hence, the school climate in both schools is not good enough. However, the results indicate that Dilachin has a better school climate than Efoyta and the difference is statistically significant (Table 7).

In light of the findings of basic question #1, the school climates mean score of both schools were less than 4 (which is "quite a bit"); moreover, the one- sample t-test confirmed that the difference was statistically significant. And also, the mean scores of the sub-scales (CL, TP, AP & CE) of both schools were less than 4(which is "quite a bit").

Furthermore, the result of the independent t-test also revealed that the mean difference between the total school climate mean of the two schools as well as the sub-scales were

statistically significant. This shows that there is a difference in school climate between the two schools; even though both schools had poor school climate. And, hence, the total mean score as well as the sub-scales (CL, TP, AP & CE) of Dilachine were greater than Efoyta and thus relatively had better school climate than Efoyta. In general, the result of the Descriptive Statistics on teachers' Perception of the School Climate Scale and Subscales were in line with Vasquez (2012) finding of the mean score of the total school climate scale (SCI) and subscales (CL, TP, AP & CE).

Research question 2: Is there a statistically significant difference between the two schools in students' EGSLCE performance due to school climate difference?

The objective of this basic question is to explore whether there is a statistically significant difference between the two schools in students' EGSLCE performance and whether there exists a relationship between overall school climates and climate factors as measured by the SCI, and overall student academic achievement on the EGSLCE English, mathematics, physics, chemistry and biology examination. Independent t-test was done to compare the mean between the two schools and relate the school climate of the sample schools to students' EGSLCE mean score. See the Table below.

Table 8

Descriptive Statistics on the EGSLCE mean score of grade 10 students

	School	N	Mean	Std. Devia-	T	P
ENG	Dilachin	922	2.59	1.40600	3.251	.001
	Efoita	432	2.35	1.00799		
MATH	Dilachin	922	2.29	1.12814	1.732	.084
	Efoita	432	2.19	.95346		
PHY	Dilachin	922	1.89	.91697	2.541	.011
	Efoita	432	1.76	.92959		
CHEM	Dilachin	922	2.32	.78044	6.678	.000
	Efoita	431	2.00	.90989		
BIO	Dilachin	922	2.00	.06576	-7.133	.000
	Efoita	432	2.33	.95084		
Total	Dilachin	922	2.22	.54836	2.926	.004
	Efoita	431	2.13	.57763		

(For a given t- value, $p < 0.05$ is statistically significant)

Table 8 shows the mean score of the five subjects (English, mathematics, physics, chemistry and biology) of the two sample schools. Except physics, the mean scores of the other four subjects were above the pass mark (which is 2.00). Moreover, the mean scores of all subjects of Dilachin were greater than Efoyta except Biology.

The result of the independent sample t-test showed that there is statistical significant difference in the group means of the four subjects except mathematics. Furthermore, the total EGSLCE mean score difference between the two sample schools is also statistically significant. It means that, the overall students' academic achievement of the two sample schools have a significant difference. However, SCI and it's subscales of the sample schools had poor school climate, the school climate index including the sub-scales of Dilachine is relatively significantly better than Efoyta (Table 7) and the overall EGSLCE mean scores of the two sample schools have statistically significant difference (Table 8).

Furthermore, there is a significant relationship between SCI and students' academic achievement in all subjects except mathematics (Tabl 8). Therefore, it is possible to conclude that the result of the inferential statistics showed that, there exists a relationship between school climate and student achievement which is in line with Freiberg, 1998; Vasquez, 2012; and Abeya, 2017; findings that school climate has a significant and positive relationship with student achievement.

To investigate whether there is an achievement difference in the overall EGSLCE mean score and for the five subjects (English, Mathematics, physics, Chemistry and biology) explicitly, due to school and gender, two-way ANOVA was applied as there are two independent variables (school and gender). This also helps to see whether there is an interaction (school-by-gender) effect or not.

Table 9

Descriptive statistics for the total EGSLCE mean score

School	Gender	N	Mean	Std. Deviation
Dilachin	Male	420	2.30	.59135
	Female	502	2.16	.50092
	Total	922	2.22	.54836
Efoita	Male	177	2.22	.61771
	Female	254	2.06	.54030
	Total	431	2.13	.57763
Dilachin & Efoyta /combined/	Male	597	2.28	.60001
	Female	756	2.13	.51608
	Total	1353	2.19	.55947

The result showed that there was a statistically significant difference in students total EGSLCE mean score between the two schools ($F = 7.53$, $df = 1$, $p = .006$); Students in Dilachin have performed better than those Efoyta. There was also a statistically significant gender difference in students total EGSLCE mean score ($F = 20.64$, $p = .001$); that is, male students performed better than female ones. But the school-by-sex interaction effect was not statistically significant ($F = .024$, $df = 1$, $p=.88$). (See appendix B)

Table 10

Descriptive statistics for **English** mean score

School	Gender	N	Mean	Std. Deviation
Dilachin	Male	420	2.65	1.79734
	Female	502	2.54	.96292
	Total	922	2.59	1.40600
Efoita	Male	177	2.51	.96594
	Female	255	2.23	1.02210
	Total	432	2.35	1.00799
Dilachin & Efoyta /combined/	Male	597	2.60	1.59701
	Female	757	2.44	.99363
	Total	1354	2.51	1.29706

The result showed that there was a statistically significant difference in English EGSLCE mean score between students of the two schools ($F = 8.66$, $df = 1$, $p = .003$); and Students in Dilachin performed better in English than Efoyta. There was also a statistically significant gender difference in English EGSLCE mean score between students ($F = 6.52$, $df = 1$, $p = .011$); and males performed better in English than females. However, the school-by-sex interaction effect was not statistically significant ($F = 1.34$, $df = 1$, $p = .247$). (See appendix C).

Table 11

Descriptive statistics for **mathematics** mean score

School	Gender	N	Mean	Std. Deviation
Dilachin	Male	420	2.39	.99952
	Female	502	2.21	1.21994
	Total	922	2.29	1.12814
Efoita	Male	177	2.38	1.03867
	Female	255	2.05	.86566
	Total	432	2.19	.95346
Dilachin & Efoyta /combined/	Male	597	2.39	1.01043
	Female	757	2.16	1.11525
	Total	1354	2.26	1.07634

The result in Table 11 showed that there was no a statistically significant difference in Maths EGSLCE mean score between students of the two schools (F = 1.89, df = 1, p = .169). It means the performance of students on mathematics in both schools were almost the same. But, there was a statistically significant gender difference in students Maths EGSLCE mean score (F = 16.93, df = 1, p = .000); that means, boys performed better in math than girls. However, the school-by-sex interaction effect was not statistically significant (F = 1.35, df = 1, p = .246). (See appendix D).

Table 12

Descriptive statistics for **physics** mean score

School	Gender	N	Mean	Std. Deviation
Dilachin	Male	420	2.06	.93878
	Female	502	1.76	.87529
	Total	922	1.90	.91697
Efoita	Male	177	1.73	1.02392
	Female	255	1.78	.85964
	Total	432	1.76	.92959
Dilachin & Efoyta /combined/	Male	597	1.97	.97565
	Female	757	1.77	.86954
	Total	1354	1.85	.92287

The result showed that there was a statistically significant difference in physics EGSLCE mean score between students of the two schools (F = 8.18, df = 1, p = .004); indicating that, students in Dilachin performed better in physics than Efoyta. There was also a statistically significant gender difference in physics EGSLCE mean score between students (F = 5.79, df = 1, p = .016). That is, male students performed better in physics than female ones. Finally, the school-by-sex interaction effect was statistically significant (F = 10.61, df = 1, p = .001); this means that, significant interaction effect was shown. The analysis in the two – way –ANOVA showed that the lines of the graph actually cross (see fig 2 below), indicating that there is a fairly large interaction between the independent variables. This actually indicates that male students in Dilachin performed better in physics than males in Efoyta; on the other hand female students performed almost equally in both schools. (See appendix E).

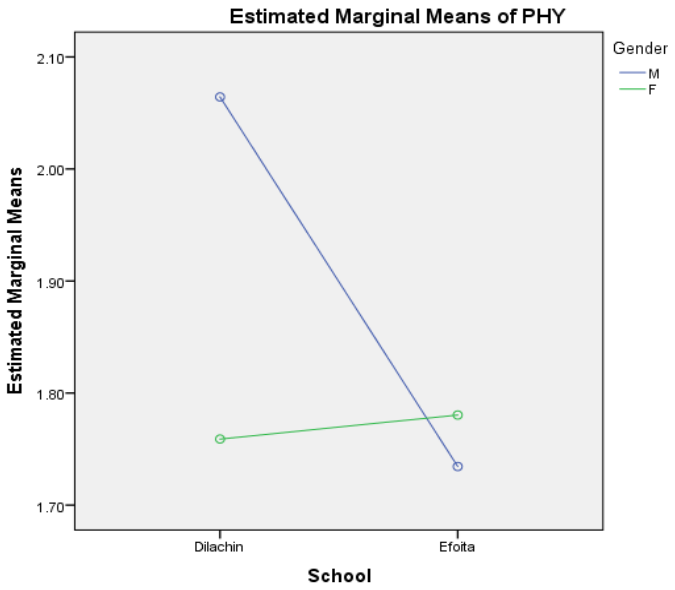

Fig. 2 school-by-sex interaction of students in physics

Table 13

Descriptive statistics for **chemistry** mean score

School	Gender	N	Mean	Std. Deviation
Dilachin	Male	420	2.38	.83664
	Female	502	2.27	.72687
	Total	922	2.32	.78044
Efoita	Male	177	2.05	.91248
	Female	255	1.96	.90820
	Total	432	2.00	.90989
Dilachin & Efoyta /combined/	Male	597	2.28	.87239
	Female	757	2.17	.80479
	Total	1354	2.22	.83703

The result showed that there was a statistically significant difference in chemistry EGSLCE mean score between students of the two schools (F = 42.92, df = 1, p = .000); and students in Dilachine performed better than Efoyta. There was also a statistically significant gender difference in chemistry EGSLCE mean score of students (F = 4.26, df = 1, p = .039); where, male students performed better than female ones.

The school-by-sex interaction effect was not statistically significant (F = .084, df = 1, p = .77). (See appendix G).

Table 14

Descriptive statistics for **Biology** mean score

School	Gender	N	Mean	Std. Deviation
Dilachin	Male	420	2.01	.08431
	Female	502	2.00	.04463
	Total	922	2.00	.06576
Efoita	Male	177	2.39	.93637
	Female	255	2.29	.96003
	Total	432	2.33	.95084
Dilachin & Efoyta /combined/	Male	597	2.12	.54353
	Female	757	2.09	.57363
	Total	1354	2.11	.56049

The result showed that there was a statistically significant difference in Biology EGSLCE mean score between students of the two schools (F = 111.62, df = 1, p = .000); unlike the other subjects, where Dilachin performed better than Efoyta, in the case of Biology, the result is reversed; that is, students in Efoyta had performed better than students in Dilachin. But, there was no statistically significant gender difference in Biology EGSLCE mean score of students (F = 3.23, df = 1, p = .073). Also, the school-by-sex interaction effect was not statistically significant (F = 2.67, df = 1, p = .102). (See appendix G).

From the analysis of basic question #2, it was found that students' academic achievement of Dilachin was better than Efoyta in all subjects (English, mathematics, physics and chemistry) except biology. And thus, the case of biology requires further investigation to identify the reasons why it is unique and different from the other subjects. Furthermore, there was a statistical significant difference between the two schools on the total (mean of the five subjects) and each subject EGSLCE mean scores except mathematics; in fact, mathematics EGSLCE mean score of Dilachin is greater than Efoyta, however, the mean difference between the two schools was not statistically significant.

Regarding gender, the result of the inferential statistics indicates that, except biology, there was a statistical significant gender difference on the total EGSLCE mean and each subject mean scores; however, in each case, the school-by-sex interaction was not statistically significant; except physics. Note that, in both schools, the performance of female students was less than the performance of males in all the five subjects. Therefore, it is recommended that each school needs to investigate to find out a particular problem or challenge that contribute to the weak academic achievement of female students and then act accordingly.

In general, from the researcher point of view, the difference in students' academic achievement between the two schools was not by chance; rather, it is a reflection of the reality on the ground. And yet, it was a good opportunity to the researcher for observing the physical environment (the buildings, laboratory facilities, library service, toilet, water supply, ...etc) of the two schools during the time of dispaching and collecting the questionnaire. It is true and could be evidence that there was a big difference between the two schools. Therefore, the results of this study is consistnt not only with other research findings (Gardner, Ritblatt, & Beatty, 1999; Bluard, 2011), but also supported by the reality on the ground.

Research question 3: Does school size have a significant relationship with students' academic performance?

Regarding this point let's compare the school size of the two sample schools with students' academic achievement.

In chapter 3, it was already mentioned that, Dilachin and Efoyta were selected as sample schools of this study. The student teacher ratio of Dilachin and Efoyta are 1:16 and 1:14 respectively. The difference in number of teachers between these two schools is 25. However, Dilachin has 627 more students than Efoyta; in some case this number could be a student population of some small sized schools. Thus, Dilachine secondary school had relatively larger school size than Efoyta. Moreover, it was found that the performance of students in Dilachin on EGSLCE was better than Efoyta and the mean score difference between the two schools was statistically significant and it is in line with the findings that

large size schools had positive impact on student achievement (Kornfeld, 2010; Breger, 2014).

Reviews of the related literatures have shown that there is no clear and common agreement among researchers and educators about what constitutes a small or a large school size (Cotton, 1996). It has been suggested that 300-400 students were an appropriate size for a primary school and 400-800 students for a secondary school. The Chicago Task Force on Small Schools regards small elementary schools as those with enrolments of less than 300. Another study which was conducted on 287 schools in North America; classified for elementary schools as small if it has fewer than 200 students, medium if there are 400-600 students, and large if there are over 600 students. Sergiovanni (1995) argued that for a given school to be productive, no more than 300 students should be enrolled in either elementary or secondary school. Jones and Ezeife (2011) conduct a research and suggested that schools with enrollments of 300 to 400 students were optimal for seven reasons, namely: 'governance', 'respect', 'simplicity', 'safety', 'parent involvement', 'accountability' and 'belonging'.

Lee and Smith (1997), on the other hand found that the school achievement increases for the enrollment levels between 600 and 900 students; in schools less than the lower limit (600) students learn less and in large high schools (more than 2100) learn considerably less. Nevertheless, with all these disparities in size, schools could have big or little or no differences in student achievement due to size differences (Lamdin, 1995; Borland and Howsen, 2003). As per the researcher observation, Sometimes the reality on the ground showed that large sized schools have better student academic achievement than the smaller ones and viceversa; it means the disparity is not consistent. In this regard, Breger (2014) found that schools with large size have a significant positive effect on students' academic achievement. On the other hand, (Driscoll, Halcoussis, and Svorny, 2003), argued that not only school and class size but also school district size hinders students achievement. But, a study performed in Ontario, Canada on 541 elementary schools, the overall result showed that there was no statistically significant correlation between school size and student achievement.

Bullard (2011), in his study on the effects of large versus small school size, he found that school size has a 'small, but not substantive effect' on the academic achievement of students. On the other hand, Oredein & Oredein (2016) found that small school size has a statistical significant effect on student academic performance.

Among a number of studies in developed countries the one which is to some extent close to the Ethiopian context is the school size between 600 and 900 students. In reviewing the literature, it has been shown that school sizes below the lower boundary (600 students) learn less, and beyond the upper boundary (900 students) also learn less and even considerably less when the school size exceeds 2100. On the other hand, the school size of Efoyta and Dilachin was 1160 and 1787 respectively. The size of Efoyta and Dilachin exceeds by 360 and 887 students from the upper boundary respectively. However, the academic performance of students in Dilachin on EGSLCE was significantly better than Efoyta, which is in line with Gardner, Ritblatt, & Beatty (1999) finding, which shows that Students in large school size had higher academic achievement.

In general, the results of the research findings in all the reviewed literatures, seemed reasonable, however, the existing reality in developing countries like Ethiopia is some thing different from the situation in developed nations. Moreover, school size in Addis ketema secondary schools are larger than the size of schools in the literature reviewed. Therefore, further study on the relationship between school size and student achievement is required on the existing context; and it will have a paramount importance to arrive at a certain conclusion about the relationship between school size and student achievement in Ethiopia in general and Addis Ababa in particular.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This part presents summary of the major findings of the study, conclusions drawn based on the findings, and recommendations.

5.1. Summary

Schools are organizations made up of a collection of individuals with their own unique cultures, backgrounds, and perceptions that serve to define the learning environment. The purpose of this study was to determine if a relationship exists between the overall school climate and student academic performance as measured by the EGSLCE mean score achievement in Addis Ketema sub-city secondary schools. The study employed teachers' perceptions of school climate as measured by SCI. The contribution of the sub-scale measures of the school climate (collegial leadership, teacher professionalism, academic press and community engagement) as they are related to students' achievement was also studied. Data were collected through the use of the school Climate Index Questionnaire and archival data from the national examination agency.

This study was guided by the following basic questions:

1. How conducive is the school climate (collegial leadership, teacher professionalism, academic press and community engagement) of the schools in Addis ketema sub-city secondary schools as perceived by teachers and as measured by school climate index?
2. Is there a statistically significant difference between the two schools in students EGSLCE performance due to school climate difference?
3. Does school size (that is, the number of students) have a significant relationship with students' academic performance?

It was impirically found that, Dilachin and Efoyta secondary schools have poor school climate. However, both schools have poor school climate Dilachin secondary school has better school climate than Efoyta. Moreover, if we have a closer look at to the EGSLCE scores of students, we can see the achievement difference between these two sample schools. Accordingly, for instance, in Dilachin secondary schools, 12.02% of students scored 4.00 and 34.02% of students scored 3.00. Similarly, in Efoyta secondary schools, only 2.55% of students scored 4.00 and 14.81% of students scored 3.00. In general, 46.04% and 17.36% of Dilachin and Efoyta respectively had scored 3.00 & 4.00. So, cosidering the above case, student achievement of Dilachin is more than twice better than Efoyta. Nevertheless, as the researcher pointed out that, 12.5 periods were the average load of teachers per week, and it seems that teachers were not loaded and can provide various supports to students so as to enhance academic achievement better than what had been scored; eventhough there are a number of factors that affect student achievement.

In general, the finding has shown that, there is a relationship between school climate and student achievement; and moreover, the result of the analysis has revealed that there was a statistical significant achievement difference between the two sample schools. Thus, this study signifies that school climate has a positive relationship with students' academic achievement and the result is in line with the finding of the previous studies conducted in different countries (Vasquez, 2012; Abeya, 2017; Bergren, 2014; Okendo et al, 2013; Odeh, Oguche et al., 2015).

Moreover, the result of this study has shown that student achievement is also associated with the school size. That is, the larger the school size, the greater was the student achievement, which is in line with Breger (2014) finding that describes schools with relatively larger size, has a significant positive effect on students' academic achievement.

Further Studies on school size have shown that, the school size between 600 to 900 students are the lower and upper limits of small and large size schools respectively. Moreover, it has been shown that school size below the lower boundary (600 students) learn less, and beyond the upper boundary (900 students) also learn less and even

considerably less when the school size exceeds 2100. In this regard, the school size of Efoyta and Dilachin was 1160 and 1787 respectively; where both schools are above the upper limits of large school size. However, the academic performance of students in Dilachin on EGSLCE score was still significantly better than Efoyta, which is in line with Gardner, Ritblatt, & Beatty (1999) finding that shows Students in large school size had higher academic achievement. This might be due to the fact that, students in large size schools (around 900 students) help each other and compute for the better. Therefore, it is advisable that the city administration of Addis Ababa Education Bureau should have a close look at to the size of the schools and act accordingly so as to inhance student achievement.

Finally, the researcher believed that, it will have a paramount importance to ask one key question; that is, if school climate has such a significant influence on student academic achievement, and ultimately enhance schools' overall outcome, then, who should take the lion share to create conducive school climate?

According to the researcher view, no doubts about that, all educators found at different levels of the education system play a paramount importance to improving school climate and hence the school outcome. However, no one can substitute the role of the school principal in improving the school climate and ultimately the student achievement. As the day-to-day leader within the school, the principal is an integral component in defining the school's climate. In a study exploring the relationship between leadership and school climate Kelley (2005) found that 'teachers' perceptions of their principals' effectiveness are related to school climate'. Thus, it is possibly proud to say school leader(s) play significant roles in creating effective teaching learning environment.

5.2. Major findings

- The finding of this study showed that the overall SCI mean and SCI mean of each school separately were less than 4 (which is "quite a bit") and thus both schools have poor school climate [(overall, M=3.54, SD = .64); Dilachin, M = 3.67, SD = .58); Efoyta, M = 3.26, SD = .67)]. Moreover, a one sample t-test analysis cofirmed that the

overall and individual SCI mean difference (SCI mean and test vale ‘4’) of the two schoos were statistically significant.

- Furthermore, the results of the independent t-test for the sub-scales revealed that, the mean differences between the sub-scales of the two schools is statistically significant. And also, the result showed that the mean difference between the SCI of the two schools is statistically significant. However, the school climate of both schools is not good enough for the teaching learning activity, Dilachin had better school climate than Efoyta.

- There is a statistically significant difference in students total EGSLCE mean score between the two schools ($F = 7.53$, $df = 1$, $p = .006$); here, students in Dilachin have performed better than Efoyta. There was also a statistically significant gender difference in students total EGSLCE mean score, where, male students have performed better than female ($F = 20.64$, $p = .001$). But the school-by-sex interaction effect was not statistically significant ($F = .024$, $p = .88$).

- The finding also showed that the sample school climate has a positive relationship with students’ academic achievement in Addis Ketema sub-city secondary schools

- Regarding school size, the reviewed literetures indicate that there is no clear cut demarcation for schools to be classified as large or small sized; moreover, there is lack of consistency in research findings between school size and student achievement. However, the result of this study showed that school size has small, but not inflated effect on student performance which is in line with Bluard (2011) finding that states large student enrollment has low, but not ‘substantive’ effect on academic achievement.

5.3. Conclusion

It was important to study the impact of school climate on student achievement as well as to identify the factors that make up a school's climate to enable school leaders to understand the climate of their schools and to consciously plan and implement strategies designed to improve their schools' climates.

School climate encompasses several different factors but, as presented in this study, the major interactions occurring in an organization such as a school involve the principal-teacher, teacher-teacher, teacher student, and school-community relationship. This study indicates that overall school climate that encompasses these horizontal and vertical link-ages has a significant positive effect on achievement. If students are to excel in school, they need to be in an environment that provides positive interactions among the different individuals in the school environment and at all levels of the school organization. This serves as a crucial starting point for stakeholders.

In performing this study:

- the researcher found that, the overall school climate index and the subscales (collegial leadership, teacher professionalism, academic press and community engagement) of the two schools is less than 4 (which is 'quite a bit'); that implies the two schools had poor school climate and is not conducive for the teaching learning process.

- On the other hand, the SCI mean difference between the two schools (Dilachin & Efoyta) is a statistically significant; and hence, Dilachin has relatively better school climate than Efoyta as measured by the school climate index. Furthermore, the finding for the total school climate index and for the sub-scales, yet, has shown that school climate has a positive relationship to students' academic achievement.

- The achievement of students in Dilachin was better in all the four subjects except Biology. Furthermore, it is important to note that this achievement difference comes due to school climate differences between the two schools

5.4. Recommendation

Based on the conclusions and findings drawn, the following possible solutions are recommended so as to improve the schools' climate:

- The overall school climate index and the sub-scales (CL, TP, AP & CE) of the schools in Addis ketema sub-city secondary schools have shown that, both schools, the school climate is poor. It is therefore recommended that, all educational officers working at different levels in general and the principals in particular should work concentrating on school climate so as to improve the school climate and ultimately students' achievement. This could be done in line with the recently introduced Ethiopia school improvement programs initiative. This program is expected to improve student academic achievements focusing on four domains: teaching-learning, school leadership, school climate and community participation.

- There was a statistically significant achievement difference between the two sample schools. Moreover, it has been shown that, the better the school climate (Dilachin), the better was the student academic achievement. This confirms that, there is a positive relationship between school climate and students' academic achievement. Therefore, principals need to pay attention to improve the school climate by sharing experience from the better ones so as to improving the student achievement.

- It is argued that schools that exercise collegial leadership, give due emphasis for teachers professionalism and acknowledge the academic achievements of students tend to be more successful than schools that do not. Thus, it is suggested that school principals should involve teachers in decision making, exercise leadership that is friendly and open and being supportive while not being directive or restrictive.

- Moreover, in order to improve academic engagement of students, it is important that school leaders and teachers set high standards for academic performance, set an orderly and serious learning environment and maintain definite standards of performance.

- Furthermore, School leaders need to find ways of including the community in the life of the school and foster positive relationships with the community. It is important that

schools involve the community not only in fundraising activities but also in the planning of different school activities. Improved school-community relations can also have a positive effect on school climate which in turn has a positive effect on achievement.

- The school size of Dilachin is greater than Efoyta and so does student achievement, which is in line with findings of other studies such as Gardner, Ritblatt, & Beatty, 1999; Breger, 2014; that show Students in large school size had higher academic achievement than the smaller ones. However, there is an argument among researchers and inconsistent findings which were reported by various studies. Therefore, further study is recommended in the context of Addis Ababa.

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Comprehensive Framework for continous school improvement.

http://ccrce.ca/sites/default/files/Documents%20and%20Forms/Appendix%20A%20Comprehensive%20Framework%20CSI%20DEECD.pdf

Appendix A

SCHOOL CLIMATE SURVEY

Addis Ababa University College of Educational and Behavioral Studies

Department of Educational Planning and Management

Questionnaires to be filled by Teachers

Dear Respondents: The aim of this research is to provide information on School Climate of Secondary Schools in Addis Ketema sub-city. The success of this study directly depends upon your honest and genuine response to each question; and therefore, you are kindly requested to be as frank as possible when rating this questionnaire.

This study is conducted for academic purpose only. Your responses will be highly respected and given the highest confidentiality. No need of writing your name.

Thank you!

A. Demographic Data

Part I: **General information**

This part of the questionnaire contains personal information. Please provide your answer according to the question by Putting (✓) mark in the box or write your answer on the space provided.

1. Gender: Male □ Female □

2. Age:_____years

3. Your Work Experience as a teacher including this year:_____years

4. Your Academic qualification: Dip.□ BED/BSc □ MA/MSc □ other □

6. Your teaching load per week:_____periods

7. In how many grades do you teach? Grade 9 □ Grade 10 □ Grades 9 & 10 □

8. When did you start teaching in this school (E.C)?_____

Direction II: The following are statements about your school. Please indicate your answer using (✓) mark the extent to which each occurs, from **none at all (1)** to **a great deal (5)**.

Thank you in advance!!

B. School Climate Idex

S.NO	Items	none at all	very little	some degree	quite a bit	A great deal
		1	2	3	4	5
1	The principal is friendly and approachable					
2	Our school makes an effort to inform the community about our goals and achievements.					
3	The school sets high standards for academic performance					
4	Teachers are committed to helping students					
5	The principal maintains /keeps/ definite /specific/ standards of performance					
6	Students respect others who get good grades.					
7	Parents play an important role for school improvement					
8	The principal puts suggestions made by the school into operation (action).					
9	Our school is able to organize community support when needed					
10	Academic achievement is recognized and acknowledged by the school.					
11	Teachers put the needs of students ahead of bureaucratic (admin-					
12	The principal explores (surveys) all sides of topics and admits (confesses) that other opinions exist.					
13	Teachers accomplish their jobs with enthusiasm /interest/					
14	Students try hard to improve their achievement.					
15	Parents and other community members are included on school planning committees.					
16	The principal treats all school members as his or her equal.					
17	Community members are responsive (quick to respond) to requests for participation.					
18	The learning environment is arranged seriously.					
19	Teachers help and support each other					
20	Community members attend meetings to stay informed about our school.					
21	Teachers perform or do inbuilt supervision regularly.					
22	The principal is willing to make changes					

23	Organized community groups (e.g., PTSA) meet regularly to discuss school issues.					
24	Teachers begin class promptly (punctually) and use class time effectively					
25	Students seek extra work so they can get good grades.					
26	Students in this school can achieve the goals (objectives) that have been set for them					
27	Teachers respect the professional competence (capability) of their colleagues.					
28	School communities are responsive to the needs and concerns expressed by parents /community members/					
29	The principal lets the school community know what is expected of them					
30	The interactions between the school community members are cooperative					

Appendix B
Tests of Between-Subjects Effects

Dependent Variable: Total **EGSLCE mean**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	9.937[a]	3	3.312	10.813	.000	.023
Intercept	5466.337	1	5466.337	17844.420	.000	.930
School	2.306	1	2.306	7.528	.006	.006
sex	6.324	1	6.324	20.644	.000	.015
School * sex	.007	1	.007	.024	.877	.000
Error	413.243	1349	.306			
Total	6920.760	1353				
Corrected Total	423.181	1352				

R Squared = .023 (Adjusted R Squared = .021)

Appendix C

Tests of Between-Subjects Effects

Dependent Variable: **English**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	28.584[a]	3	9.528	5.723	.001	.013
Intercept	7084.638	1	7084.638	4255.228	.000	.759
School	14.414	1	14.414	8.658	.003	.006
sex	10.848	1	10.848	6.515	.011	.005
School * sex	2.236	1	2.236	1.343	.247	.001
Error	2247.650	1350	1.665			
Total	10834.000	1354				
Corrected Total	2276.233	1353				

R Squared = .013 (Adjusted R Squared = .010)

Appendix D

Tests of Between-Subjects Effects

Dependent Variable: **Mathematics**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	23.019[a]	3	7.673	6.707	.000	.015
Intercept	5865.690	1	5865.690	5127.258	.000	.792
School	2.162	1	2.162	1.889	.169	.001
sex	19.366	1	19.366	16.928	.000	.012
School * sex	1.544	1	1.544	1.350	.246	.001
Error	1544.428	1350	1.144			
Total	8492.000	1354				
Corrected Total	1567.448	1353				

R Squared = .015 (Adjusted R Squared = .012)

Appendix E

Tests of Between-Subjects Effects

Dependent Variable: **Physics**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	27.017[a]	3	9.006	10.804	.000	.023
Intercept	3861.643	1	3861.643	4632.651	.000	.774
School	6.821	1	6.821	8.182	.004	.006
sex	4.825	1	4.825	5.789	.016	.004
School * sex	8.848	1	8.848	10.614	.001	.008
Error	1125.321	1350	.834			
Total	5809.000	1354				
Corrected Total	1152.338	1353				

R Squared = .023 (Adjusted R Squared = .021)

Appendix G

Tests of Between-Subjects Effects

Dependent Variable: **Chemistry**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	34.041[a]	3	11.347	16.762	.000	.036
Intercept	5381.812	1	5381.812	7950.119	.000	.855
School	29.053	1	29.053	42.917	.000	.031
Sex	2.885	1	2.885	4.262	.039	.003
School * sex	.057	1	.057	.084	.772	.000
Error	913.202	1349	.677			
Total	7608.000	1353				
Corrected Total	947.243	1352				

R Squared = .036 (Adjusted R Squared = .034)

Appendix H

Tests of Between-Subjects Effects

Dependent Variable**: Biology**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	32.646[a]	3	10.882	37.438	.000	.077
Intercept	5416.674	1	5416.674	18635.586	.000	.932
School	32.445	1	32.445	111.623	.000	.076
Sex	.938	1	.938	3.227	.073	.002
School * sex	.776	1	.776	2.671	.102	.002
Error	392.395	1350	.291			
Total	6445.000	1354				
Corrected Total	425.041	1353				

R Squared = .077 (Adjusted R Squared = .075)