THE EFFECTIVENESS OF EDUCATION INFORMATION SYSTEM (EIS) IN THE MANAGEMENT OF SECONDARY SCHOOLS: THE CASE OF JIMMA ZONE

BY

MASHO JIMA

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

April 2011

THE EFFECTIVENESS OF EDUCATION INFORMATION SYSTEM (EIS) IN THE MANAGEMENT OF SECONDARY SCHOOLS: THE CASE OF JIMMA ZONE

BY

MASHO JIMA

A Thesis Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirement for the Degree of Master's of Arts in Educational Leadership

April 2011

THE EFFECTIVENESS OF EDUCATION INFORMATION SYSTEM (EIS) IN THE MANAGEMENT OF SECONDARY SCHOOLS: THE CASE OF JIMMA ZONE

By

Masho Jima

Approved By Board of Examiners:

1.	Yekunoamlak Alemie (PhD)		13/06/2011
	Chairman, Dept's Graduate Committee	**Signature**	**Date**
2.	Jaleta D.		6/6/2011
	Advisor	**Signature**	**Date**
3.	Yekunoamlak Alemie (PhD)		13/06/2011
	Examiner	**Signature**	**Date**

Acknowledgement

First I would like to express my distinguished advisor Dr. Jeilu Oumer, vice president of the university, who had painstakingly gone through all my work. He offered me meticulous and constructive feedback, encouragement, and providing resources like books, journals, supplementary websites, and the like all the time.

Special thanks are due to my genuine sister Sewunat Bora who provided me with precious advice and an enormous support like typing, editing, grammatical corrections and in facilitating conditions in general.

I wish to admire generous academic support like materials, and encouragements of Ato Daniel Daba, Ato Tefera Intele, Ato Habtewold Deti, Ato Gemechis File, and Adula from Jimma University staff.

Lastly, valuable thanks go to my best sister Mena Workineh who helped me at home by providing and facilitating conditions for this study.

Table of Contents

CONTENTS PAGE

List of Tables

Tables Page

Abbreviations and Acrimonies used

EIS	Education Information System
EMIS	Education Management Information System
ICDR	Institute of Curriculum Development and Research
ICT	Information Communication Technology
Km	Kilo Meter
PPS	Preparatory School
PTA	Parent Teacher Association
SCL	School Leaders
SS	Secondary Schools
SV	School Supervisors
UL	Unit Leaders
VP	Vice Principals
WEOCPO	Woreda Education Office Core Process Owner (Vice)
WEO	Woreda Education Office
WS	Woreda supervisors
ZEOCPO	Zone Education Office Core Process Owner (Vice)
ZEH	Zone Education Head
ZEO	Zone Education Office

Abstract

This study was aimed at examining the effectiveness of Education Information System (EIS) for the Management of secondary schools. The study was conducted on education system of Jimma Zone and its respective woredas. A total of 162 stakeholders from zone education office, Woreda Education Personnel and school were treated inline of EMIS. Jimma zone was selected as per the seriousness of the problem. Woredas were randomly selected from three cluster classes namely class A, class B, and class C by using stratified sampling technique. All secondary schools, preparatory schools, and woreda education offices' personnel were included in the study by using availability sampling. Purposive sampling technique was applied for the collection of data/information. In-depth interview, focus group discussion, personal observation, and questionnaire were used as the tools to gather all the necessary data/information both quantitatively and qualitatively. The data were subjected to analysis by using descriptive presentation, arithmetic mean, standard deviation, one way ANOVA, chi-square, and T-test, together with qualitative analysis. The findings disclosed at EMIS are impeded and handicapped by different factors such as; ICT materials, trained manpower, IT support, data management system, and employee readiness. The effectiveness of EMIS is measured through the efficient utilization of IT resources. The employee satisfaction in line with the training given was also treated and as a result the trainee was disappointed due to many forces like: absence of need assessment on the area that the personnel needs to get training. The schools and the education system of the zone are suffering from absence of communication to make the flow of information faster in terms of content, timelines, and form. The findings suggested that, the basic problem of this education system was the little link of the schools, NGOs, and the school community. All these key stakeholders are the parts and parcel of the system. Thus, they have to work in collaboration with one another.

CHAPTER ONE

1.The Problem and Its Setting

This chapter introduces the problems and its approaches, the concept of EMIS, objectives of the study, delimitation of the study, definition of operational terms, significance of the study, limitation of the study, and organization of the study.

1.1. Background

There is no universally-accepted definition of EMIS in popular use throughout the region. The acronym, EMIS, means different things to different people. The annual school census conducted in all countries is typically associated with EMIS, but aside from this, people's understandings of what an EMIS is and the vision of what EMIS could be can be quite different from one country and one person to the next. For some people any effort to improve the quality of data and information is associated with EMIS. For some an EMIS is simply an updated, computerized statistical information system. Others refer to any administrative, function-specific database system as an EMIS, e.g., personnel management systems, financial management systems, project monitoring systems, municipal education database systems, etc. For some EMIS is all about computers and computerization (Cassidy, 2005).

The acronym EMIS stands for "Education Management Information System". It is a system for organizing information base in a systemic way for the management of educational development. It is an information center in the ministry of education responsible for collection, processing, analyzing, publication, distribution, rendering information services for users of educational information.

It is important to realize that statistics is part of the EMIS system. Hence, statistics of formal, non-formal, early childhood, higher education, teacher training institutions and technical and vocational institutions all are under the responsibility of EMIS. Hence, the collection, processing, analyzing and reporting of statistics in these areas remain the responsibility of EMIS center of the Ministry of Education. In the event that each department and sections of the ministry collects and compiles its own statistics, EMIS can obtain final products from each department or section for publication and use.

EMIS is also responsible to give a substantial support in the efforts made to assess the performance of the education system and monitor the distribution of resources, deployment of teachers, student performance assessment and review of internal efficiency of the education system etc. moreover, render technical support for research unit of the ministry of education (Tegegn, 2003).

Under current practice, Education Management Information Systems (EMIS) are typically limited to centralized databases containing basic, school level data: pupil data (enrollment, age, repetition), teacher data (experience, placement), school inventory data (location, number of classrooms, equipment etc.). EMIS typically does not formally include: Performance Data, School finance information (often managed by another Ministry – Finance or Planning), cost accounting, provisioning of materials (textbooks etc.), monitoring of internal management initiatives (e.g. special projects).

Jimma is a Zone in the Ethiopian Region of Oromia. Jimma is named for the former Kingdom of Jimma, which under the former province of Kaffa in 1932. Jimma is bordered on the south by the Southern Nations, Nationalities and Peoples Region, the northwest by Illubabor, on the north by East Welega, and on the northeast by West Shewa; part of the boundary with East Shewa is defined by the Gibe River. The highest point in this zone is Mount Maigudo (2,386 m).

The 1994 national census reported a total population for this Zone of 1,961,262 in 432,101 households, of whom 979,708 were men and 981,554 women; 190,395 or 9.71% of its population were urban dwellers at the time. The five largest ethnic groups reported in Jimma were the Oromo (81.57%), the Yem (5.28%), the Amhara (4.95%), the Kullo (2.9%), and the Kafficho (1.78%); all other ethnic groups made up 3.52% of the population. (Based on research performed in the early 1990s, as many as 500,000 inhabitants may be members of the Yem). Oromiffa was spoken as a first language by 85.96%, 7.86% Amharic, 1.95% spoke Kullo, 1.45% spoke Yemsa, and 1.19% spoke Kafa; the remaining 1.59% spoke all other primary languages reported. The majority of the inhabitants were Muslim, with 82.57% of the population having reported they practiced that belief, while 15.78% of the population said they professed Ethiopian Orthodox Christianity, and 1.47% were Protestant.

The Central Statistical Agency (CSA) reported that 26,743 tons of coffees were produced in this zone in the year ending in 2005, based on inspection records from the Ethiopian Coffee and Tea authority. This represents 23.2% of the Region's output and 11.8% of Ethiopia's total output, and makes Jimma one of the three top producers of these goods, along with the Sidama and Gedeo Zones (Jimma zone-Wikipedia, the free encyclopedia: Dec, 2010).

As with primary education, a substantial expansion of secondary education also took place under ESDP I and II. Consequently, the total enrollment in secondary education (Grades 9 to 12) increased from 426,495 in 1996/97 to 953,217 in 2004/05, a rise of 123%. This increase was facilitated by an increase in the number of secondary schools from 369 in 1996/97 to 706 in 2004/05, which represents an increase of 91%. Previously, secondary schools were mainly concentrated in urban areas. However, during ESDP-I and ESDP-II the percentage of secondary schools in rural areas increased from 7.0% in 1996/97 to 12.7% in 2004/05(ESDP-III). Moreover, as stated by Lasonen and others (2005) Educational administration faces the challenge of managing an information system at woreda and zone levels and of facilitating community participation in school governance. This shows how complexity of management is enhancing and enhanced. So, this paper tries to identify the problems as per the statements of the problem.

1.2. Statement of the Problem

Increasing number of countries have adopted the concept of Education Management Information System and the title of EMIS. However, many have already failed. Simply adopting a new name, obtaining funds for computers, making study visits and having project cars will not create a new system(Tegegn, 2003).

The increasing demand for better data and information is a very promising development for EMIS. The lack of significant local demand for better data and information has often been cited, in assessments from around the world, as one critical explanation for why earlier efforts to build comprehensive, integrated EMIS have not been very successful.

A lot of money, time and other resources have been invested in efforts to improve data quality, to computerize many administrative and management functions, to build EMIS and to encourage more data-driven decision making over the past 15 years. The results of these efforts have been mixed. While there have been some notable successes in computerizing administrative

management functions in ministries throughout the region, despite years of effort and considerable investment, development of comprehensive, integrated computer-based EMISs have been slower than anticipated. Data and information operations continue to be diffused across a number of divisions and departments with little coordination of operations and limited use of data and information standards. It is not uncommon to find one division or department using different software and hardware platforms as well as different data definitions and coding schemes. Further, while some operations have been computerized, many continue to be maintained manually, which further slows processing and data integration (Cassidy, 2005). Although most education systems require schools to record information on paper, the failure of many systems to enter that information in DBMS, to analyze that information, or to share results with school leadership has reinforced poor reporting practices at many levels (survey of ICT and education in the Caribbean – Volume I: Regional Trends and analysis, n.d).

The number of secondary school teachers increased from 12,106 in 1996/97 to 17,641 in 2004/05, which is a 45% increase. The percentage of qualified teachers at this level was 40.6% in 2004/05. The target set for ESDP-II was 73.2%, which is higher than the achievement at the end of ESDP-II, 2004/05. To enhance the quality of education at secondary level, ICT infrastructures were provided to schools to receive satellite education transmission. Moreover, with the objective of improving the quality of education and supporting teachers, the process has started to make use of School Net service for the 161 preparatory schools (grade 11-12). The objective of the School Net program is to support the country's education system with ICT. This involves providing personal computers to schools to set-up internet laboratories, organizing training for teachers, digitization of existing video-based educational contents for web access and eventually facilitating community access to ICT (MoE:ESDP-III, 2005:15).

Repetition rate for Grade 9 decreased to 10% in 2003/04 from 23.2% 1996/97. The gender disaggregated data for 2003/04 indicates that the repetition rates for boys and girls were 9.1% and 11.6% respectively. In 1996/97 the repetition rate for boys was 17.9% while for girls it was 29.7%. Unlike repetition rate, the dropout rate for the same grade increased during the same period from 9.2% to 19.3%. Disaggregated by gender this figure rose from 8.9% to 16% for girls, whilst for boys it increased from 9.5% to 21% (MoE: ESDP-III, 2005:21).

According to the MoE(2004), MDG goal 2 and 3 of the millennium declaration is to achieve UPE by 2015 for boys and girls eliminate gender disparity in primary and secondary education: preferably by 2005. Net enrolment ratio is an indicator that measure performance or goal achievement. A good education indicator system is expected to provide accurate and precise information to illuminate the condition of education and contribution to its improvement. This is highly related with that of the success of EMIS.

Implementation capacity at woreda level is not yet at the level expected to carry out their responsibilities. Woreda capacity building programs have been initiated: deployment of staff at regional level was undertaken as a first step in building the capacity at other levels. However, there is still a huge need for training on supervision, strategic planning and budgeting, education management information systems etc (GOE, 2007).

The government made a great effort to facilitate conditions to make EMIS functional. But as it is mentioned on Mekonen (2010) the EMIS outputs of the Oromia Region lack quality in terms of accuracy, presentation and timeliness; hence it had the problem of reliability. This is the basic problem that has initiated the researcher to conduct this study.

1.3. Basic Questions

In order achieve the stated objectives, and examine the status and the problems encountered in Education Information System (EIS) for the Management of secondary schools, the study was conducted to attempt the answer for the following basic questions.

1. What information secondary schools needs at large?
2. What information are supplied to secondary schools by EIS?
3. To what extent information is sufficient, valid, and consistent for decision making?
4. What measures are taken for the implementation of EIS for decision making?
5. What are the problems, and challenges that impedes/hinders/ the development of EMIS?
6. What procedures are in place for collection and dissemination of education information system?

1.4. Objective of the study

1.4.1. General Objective

The general objective of the study is to assess the effectiveness of Education Information System (EIS) for the Management of secondary schools in Jimma zone.

1.4.2. Specific Objectives:

The study has the following specific objectives:

1. To assess the supply and demand of information for the management of secondary schools.
2. To assess the effectiveness of EMIS in line with time, relevance, and reliability.
3. To assess the extent of information utilization to manage secondary schools.
4. To assess efforts made to improve EIS to support decision making process in education system.
5. To identify the major problems and challenges of EMIS.

1.5. Significance of the Study

This research is significant for the following reasons:

1. The study may help to provide timely and relevant information for planners and decision makers.
2. It may help the concerned bodies at different levels of the system to take corrective actions to complete the annual education census in timely base.
3. The study may assist school leaders, and all stakeholders to establish effective and efficient EMIS functional units.
4. The study may site all the possible solutions for the needy.
5. The study may indicate ways for proper collection, recording, and reporting of educational information.
6. It may lay foundation for other researchers to conduct further investigation.

1.6. Delimitation of the Study

Education Information System (EIS) has both quantitative and qualitative measurements in the management of secondary school. However, in this study measuring (EIS) in the management of secondary schools were more analyzed quantitatively. This is mainly because of the difficulty of quantifying the qualitative aspects of EIS is attached to social and other psychological costs of the participants of the study.

As far as the study setting is concerned, the coverage of this study was Jimma zone. Because Oromia Education Bureau clearly reported the severity of the problem of EIS in this area (OEB, 2009). Time wise, the study tries to examine the EIS and decision making strategies of the schools and education offices of two consecutive years (2009/10 and 20010/11) because it is almost three years that BPR was in functional and the education system was restructured newly to be supported to EMIS.

The study does not cover all the education offices of Jimma zone rather it is delimited to eight woredas of the zone because of time, manpower and budget constraints of the researcher. These eight woredas were selected randomly from the three strata; class A, class B, and class C. To make the distribution fair and good representative of the study, two woredas were selected from stratum A, and two woredas were from stratum B, and four woredas were selected from stratum C since there are nine woredas which are included in this stratum (Class C).

Moreover, this study was delimited to 14 secondary schools out of 28 schools and two preparatory schools out of 7. Again the study was delimited to the school principals, all vice principals, all unit leaders, PTA members and external and internal supervisors in the assumption that they are the main role play of EMIS. The study also included all woreda education officers, WEOCPOs, ZEOCOP, woreda supervisors, woreda and zone statisticians, and zone education officers because they are the main actor of EIS and decision making processes.

Finally, the study was delimited to government secondary and preparatory schools because the problem of EIS and decision making problem may seriously visible. Government schools are less committed than that of private schools due to many factors like low salary and others.

1.7. Limitation of the Study

The study was challenged with some unforecasted situations such as non response on subjective questions of the questionnaire and interview was challenging and tiresome. Principals, vice principals, unit leaders were not willing to cooperate as needed, and even those who showed cooperation were creating delaying tactics by giving appointment for various reasons, some filled the questionnaire carelessly, and few failed to return the questionnaires. These conditions made the researcher consume more time than previously allocated for data collection. Therefore, since those conditions made the study very difficult, the data and explanations given could not be considered as comprehensive as possible; and hence, may result in limited generalizability.

1.8. Organization of the Study

The study is divided into five chapters. The first chapter deals with introduction, statement of the problem and its approach, significance of the study, delimitation of the study, limitation of the study, operational definition of terms, and organization of the study.

The second chapter deals with the review of related literature on analyzing "the effectiveness of Education Information System (EIS) for the Management of secondary schools". This part would give a highlight of the theoretical framework of the topic under study like: EMIS, MIS, EMIS and Training, Information Management Lifecycle, School Management Information Systems, EMIS success Factors.

The third chapter focuses on research design and methodology. The fourth chapter, namely the presentation analysis part of the study diagnosis the data collected through questionnaire, interview, document analysis, FGD, and personal observation. The fourth and final chapter is dedicated to summary, conclusion, major findings, and recommendations of the overall study. Appendixes were attached at the end.

CHAPTER TWO

2. Review of Related Literatures

This chapter deals with the review of related literature which comprises information system, EMIS, MIS, life cycle of information system, ABM, Integration of ICT with EMIS.

2.1. Education Management Information System (EMIS)

A management information system informs management. An education management information system (EIMS) informs the management of education process. Managing education through informed decision- making requires the availability of accurate and timely information, which links together resource input to education teaching and learning. An Educational Management Information System is therefore, the basis of management, planning and evaluation of an education system (Carizo et al, 2003).

EMIS is demand responsive, which means that it serves the needs of the consumers or the users of information. Thus, to serve one's clients, conducting surveys of the information needs of consumers and the capacity needs of the producers; and produce according to user-friendly and interpretable information products and services. To develop and maintain such a vast demand responsive and user-friendly system, various kinds of knowledge and skills are required in different areas, such as system development, quality assurance training, technical support, and national reports

2.1.1. Management Information System (MIS)

An MIS is a collection of interacting information systems that provide information for both operations and managerial needs. The most important aspect of this definition is its inclusiveness. An MIS encompasses all the information-providing systems at all levels of the organization; however, it must be stressed that is a collection of information systems rather than one "total" system.

In theory, a computer is not necessarily an ingredient of an MIS, but in practice it is unlikely that a sophisticated MIS could exist without the processing capabilities of a computer. Nevertheless, every MIS includes non computer elements. The word "interacting" in the definition implies some degree of integration of the multiple information systems involved. This conception of an

MIS, though broader than that of many experts, is fully justified because the information systems of all the organization's functions are increasingly tied together in a supra system of quasi-independent information systems, such that no one information system can be viewed as entirely separate from the others (Tegegn, 2003).

2.1.2. EMIS and Training

As stated by Tegegn (2003), Training is one of the essential components of EMIS. Because the field of technology is changing fast and manpower turnover is high, training must be viewed as continues activity, and one that management needs to pay greater attention to. It is also an all round activity because the system is powered by each components working with the other in achieving environment to make the vision happen.

On the other hand, training aimed at broadening participants' perspective is generally targeted at middle- and senior-level decision-makers and tends to be short-term (a few days to a few weeks at a time). The rationale for this type of training is that, quite often, senior officials have little understanding of how national education data can be of use to support planning, and decision-making. They do not see the ways that data can be of use to them or improve their own job performance. When intended users do not know to interpret and use quantitative data, they tend to ignore them (Chapman and Mahlck).

Tegegn (2003), summarized the general content of EMIS training as follows: Survey administration, systems development and programming, policy related data analysis, and presentation, compiling reports, publication, and dissemination, networking and communication, maintenance of hardware and software, documentation, EMIS management and innovative leadership, planning and programming, and monitoring and evaluation.

To summarize, training is learning experience in that seeks a relative permanent change in individual that will improve the ability to perform on the job. Every organization needs to have well-trained and experienced people to perform the activities that have to be done. Therefore, EMIS personnel have to get training in order to perform their duties efficiently and effectively and to cope up themselves with the changing situations and the new technology.

2.1.3. Objectives and Functions of EMIS

There is an inevitability about the increased importance assigned to data based planning and management (Chapman & Mahlck, 1993). Information determines the knowledge base from which critical decisions are made and provided current as well as projected scenarios of the system for which decisions are being made. It is with this ground that, Tegegn (2003) has observed information as an additional knowledge the users' desire about the functions under their responsibilities. Information indicates knowledge about how are the goals and objectives set are achieved, how efficiently the resources provided are being utilized and how far the governing rules and regulations are being followed. Authorities in the field, put the function of information in different ways through the central essence appears the same.

For instance, Telem (1990) has put the function of information into four main types: (i) analysis of accumulated historical information, (ii) what has happened information, (iii) why did it happen information, and (iv) what would happen-if information. When one looks at the functions listed above, it becomes apparent that information serves the functions of showing the status and past trends of the sector's performance, and of forecasting in the process of planning. Curt and others, (2006) broadly have categorized the functions of information into two: facilitating communication between different stakeholders and providing basis for informed decision-making at all levels of organizations. The main objective of an EMIS is to integrate information related to management of educational activities, and to make it available in comprehensive yet succinct ways to variety of users. The most direct operational application of EMIS is to support ongoing management, planning, and monitoring and evaluation activities of the education system.

The overall concept of an EMIS has given to provide information for users in the following functions: Management and administration of the education system, planning of the education system (Macro and Micro), and monitoring and evaluation of the education system. (Carrizo and others, 1996).

Therefore, the aim of EMIS is to promote the development and operation of education and training management information systems for accountability, planning and monitoring to achieve quality and effective service delivery in the national education system.

2.2. Information Management Lifecycle

This section consists of data collection, data analysis, reporting, publication, dissemination, and feedback.

2.2.1. Data Collection and Processing

Most often, data is collected by means of questionnaires. These are prepared in centralized system at the EMIS center or through decentralized regional offices. Irrespective of the method followed, questionnaires are used to collect school data annually. To do this properly, knowledge of the needs of planners, decision-makers, researchers, and other users is required (Tegegn, 2003).

According to UNESCO (2006), educational authorities routinely collect information on schools as part of their regular operations. Such data include location of school, condition of school facilities, number of grade offered, numbers of students by sex and age, numbers of repeaters, numbers of teachers by sex and qualification.

As cited by Carrizo, Saugeot and Bella (2003), data collection must include all the fields covered in EMIS. In addition to education data, it should gather and assemble other information indispensable to EMIS: in particular the demographic and financial data which are necessary for the calculation of enrolment rates, and financial indicators (for example, education expenditures in relation to GDP); and also quantitative and contextual data necessary for the analysis, comprehension, and the interpretation of trends in education.

As Mulugeta (2001) further explained, if there is any problem with the quality of data, it is unthinkable to obtain precise results by applying sophisticated methods of analysis. A pre-requisite to obtain quality data is a good design of the data collection instrument. This includes a good questionnaire design and a good sampling design.

It is obvious that school is the main source of data for EMIS functions. The way records are kept at school level matters hugely when it comes to data collection. School heads, teachers, or record officers complete the questionnaire by filling in the necessary data according to the questionnaires. Most often schools have data in a list form, un aggregated, which is easy for the school head or record officer to complete but difficult when it comes to extracting specific information as it is not aggregate (Tegegn, 2003).

Once you have collected the data, you need to plan how to organize its many different types so that it is unable for planning purposes (Tegegn, 2003). He also described some of the most important aspects of this activity: monitoring instruments, data entry program design, and data entry, data cleaning, and data compilation. Generally, the data collected from the schools are affected by the following factors: staff members and skills, administrative organization, working procedures and task management, materials facilities and logistical support and financial support for operation.

2.2.2. Data Analysis and Reporting

Data analysis involves looking more closely at the data, and in various ways, in order to extract information useful for planning and decision making. The analysis is done to provide information to planners, decision-makers, researchers, policy-makers, and other users. In other words, the results of the analysis can point decision-makers in the right direction (Tegegn, 2003). Moreover, Wikipedia, the Encyclopedia (2007, online), further described that data processing in any computer process that converts data in to information or knowledge.

As soon as the data processing is finished, and if possible, even before all of them are done, it is necessary to begin analyzing the results obtained. This analysis enables a primary verification through comparison with results of the previous year. If huge differences or in coherencies appear, it is indispensable to proceed to verifications to complete those already carried out at the time of return of the data (Carrizo, Saugeot and Bella, 2003).

Furthermore; data analysis should be done with users in mind. There are several types of users: general users, decision-makers, planners, researchers, information service providers, students, and teachers. As a result, the type of analysis we make is often tuned to the needs of different categories of users, especially policy-makers. It will also guide us in the type of report we subsequently compile (Tegegn, 2003). As he further described, it is always advisable to prepare a short report of the outcome for top decision-makers, who may not have the time to read a long report.

To generalize, data analysis is useful for planners, decision-makers, researchers, policy-makers, and other users to know the current status related to enrolment, teachers, and the level of available facilities, and use for the information for planning and research purposes as well as to find out how the policy they are promoting is working. Moreover, reporting is also important for

top decision-makers and to the general public who need the statistics for reference purposes and for monitoring and evaluation experts, national and international organizations that use statistics to include their background report.

2.2.3. Publication, Dissemination, and Feed-back

The general principle is "publish or perish!" refers to the pressure to publish work constantly to further or sustain a career in academia. Without publishing your findings, the effort you have put in to collecting, processing, and analyzing the data is lost. You may well have printed some reports when asked by higher decision-makers, planners, researchers, and other users (Tegegn, 2003). The publication of information should be carried out as possible in order to provide the services for which EMIS has been set up. The first document must be transmitted to policy and decision-makers and other pertinent users without delay to show them the system's efficiency and the benefits they can expect from it (Carrizo, Saugeot and Bella, 2003).

The dissemination-communication takes different forms according to the people they are addressed to and their needs. As the first level, when the information is intended for the managers of the education system, it is necessary to quickly provide them with the most recent information possible. At the second level, the information is transmitted to a much large circle of users in the education system (Carrizo, Saugeot and Bella, 2003).

According to Hallac (1990) dissemination of information is never a substitute for management skills, but it is an important complement to them. As management control expands, the able manager can administer a wider range of responsibilities if her/his information channels are well oiled.

In practice, dissemination takes a number of forms: Regular distribution of school abstracts, quick references, and indicators' reports to users, distribution of pamphlets and postures to users, reports and briefing provided to planners and decision-makers at different levels of administration-provinces, districts, and school (Tegegn, 2003).

As Tegegn (2003) the assumption is that once produced and distributed, the products will be used or applied. Then feed-back can be collected. Feed-back is a learning process. Through feed-back we will learn of our achievements and where problems need correction. Feed-back also allows us to realize that others know and appreciate what we are doing, that there may be more innovative

ideas that could support our effort to produce timely and accurate information for an overall educational development.

2.3. School Management Information Systems

Being at the beginning stage of the School Management Information Systems, computerization of the school management is the basic subject of today's school management. Principals have started to make use of information systems in the gradually-increasing daily management staffs. Generally speaking, the reasons to use information systems can be stated as increasing effectiveness at work by processing information, increasing managerial effectiveness by meeting the need for information and gaining superiority in competitions by directing strategies (Scott, 1986).

School management information systems aim to provide support for the managing and educational activities of the school managers by processing information. Telem (1990) defines school management information systems as "a management information system designed to match the structure, management task, instructional processes and special needs of the school". As for a broad definition, contributions of the information systems to schools can be defined as making programs more effective, making the teaching process and the changes in learning environment professional, enabling teachers to exchange their experiences in a more systematic way, working in teams, determining the needs of the students (Madley, 1987), supporting the school managers and other staff in doing their duties, developing their performances, effectiveness and efficiencies (Telem and Buvitski, 1990). In other words, school management information systems increase effectiveness and efficiency by saving time and facilitating development of alternative solutions for sophisticated problems.

Introduction of school management information systems to schools have caused significant changes in roles and working styles of managers (Telem, 1990). School management information systems have changed school management in the areas of leadership, decision making, workload, human resource management, communication, responsibility and planning. Strategically school management information systems help the manager in determining the aims of the school, making long term plans, distributing resources, and forming educational methods of future, determining performances of teachers and success of the school (Telem and Buvitski, 1990;

Telem, 1991). In this way, school management information systems can also be used as a tool to initiate and use educational leadership of the manager (Telem, 1990).

School managers can make more efficient decisions when they get correct and up-to-date information by school management information systems. Decision making is the heart of educational management.

2.3.1. Information Age

In this information age, coupled with the complex nature of increasingly large modern organizations such as the universities, there is the need for acquisition of appropriate information equipment to process data into information and disseminate the information for management use, towards effective university administration.

Information is an important resource in the effective management of any organization. Information is any fact or set of facts, which is useful in making a specific decision among alternative courses of action. The information potential of data is enhanced by refinement, which involves selection, processing, sorting, and re-organizing the data into a usable form and transmission to the appropriate end-users.

2.3.2. Activity Based Management (ABM)

Defined as a discipline that focuses on the management of activities as a way to improve customers' value and profit. ABM includes cost driver analysis, activity analysis, and performance measurement. This work describes the benefits of activity-based costing and how to implement it. It shows how to avoid implementation failure and how to sustain the activity-based costing and management system. The unification of time, cost and quality is illustrated, and the text shows how to trace the flow of costs from resources to final cost objectives.

2.3.3. Management

Management is an effort made to coordinate the exertion of human and material input in order to achieve the set objectives. It is an art of coordinating knowledge and skills of people involved in EMIS activities to get the planned objectives and visions accomplished. We will introduce the concept of total quality management (TQM) in the following section. Total quality management approach: The approach we need to adopt is that of total quality management. A philosophy that ensures the quality of data collection instruments, data processing methodology, analysis and dissemination(including good skills to communicate to users), feedback and utilization of

feedback information for future enhancement of acquiring relevant information for decision making. Quality management and leadership of the EMIS unit of the ministry including planning, monitoring and evaluation, and follow up strategy is part of the whole that need attention for total quality management. As David butler puts it "Total quality management is a philosophy that integrates a focus on the user, a focus on the work process, and a focus on continuous learning".

It refers to all the work we do in organizing and systematizing the procedure we follow, the equipment we use, the people involved in building EMIS as well as the relation between EMIS as a center of information and users. Conscious Communication between EMIS staff on the one hand and conscious communication with user on the other is vital in achieving total quality of outputs and services for the development of education.

User focused approach: The user of information is central to EMIS functions and management. There are internal and external users of educational information. Internal users are planners, decision makers, decision support systems, different departments and divisions of the ministry of education. External users are other government and non-government institutions, national and international organizations, donor agencies and civil societies. All are equally important for our work in the efforts made towards quality output (Tegegn, 2003).

Better data leads to better plans and policies, which leads to better practices. Batter data is the necessary input to a decision-making but not a sufficient one. The positive impacts come only as the information is used and used wisely (Chapman and Mahlck, 1993). This requires that users have access to relevant and accurate data, the necessary training to interpret them and an understanding of the larger context in which their decisions will be implemented, and requires users to pay attention to the impacts of their decision-how information contributes to policy, and how policy influences practice.

In sum, it is important to note that all managers of educational information should focus on users' needs and expectations. The nature of the information and the ways in which it is provided should therefore be tailor made for each level in the education system.

2.3.4. Information and Decision-Making

Decision-making is the backbone of administrative functions. This is because decisions direct actions. Good and effective decisions can only be made when right information is made available at the right time to the right recipient. Information for decision-making is dynamic: therefore, it

needs to be constantly up-dated. Decision-making, itself, is a dynamic process. Managers need continuous flow of information in order to make appropriate decisions. Decision-making efficiency of managers can therefore be greatly enhanced by the quality of information they are able to utilize in decision-making. To supply the appropriate information to the right person at the right time, that information is a resource that needs to be managed just like any other resource in the organization. The problem confronting most organizations is the collection and storage of information (Tricker, 1976).

Educational institutions are not only facing complex managerial problems, they are also structurally complex. Modern educational systems, like other modern social and economic systems, have become increasingly complex themselves. The complexities of educational systems and their institutions and other developing countries, tend to be characterized by such phenomena as: student population explosion, diversities in the dimensions of programs and procedures, inadequacy of funds and other material resources even in the face of inflation, and conflicting models and policies adopted for implementation. At the core of the above bewildering list of complex variables is the problem of paucity of information as well as poor capacity for information management.

The demand for appropriate, adequate and timely information for management decisions in educational institutions appears challenging, because the educational system is expanding at an unprecedented rate. As the system and its institutions expand, so do the problems of their planning, organization, administration, monitoring and control. Correspondingly, there is the need for increased information acquisition and information management capacity among educational administrators, planners and policy makers(Chapman and Mahlck, 1993).

Education is one of the key industries in which government invests her scarce resources. Educational institutions, therefore, are expected to justify the resources that government invests in them for the educational development of the society and the nation. The already scarce resources need to be judiciously utilized. The educational planners, administrators and policy makers need more than ever before accurate, up-to-date and timely information to make appropriate decisions. Right decisions give direction for a right course of action. When an organization is designed to provide correct information to managers, decision processes work extremely well and tasks will be accomplished. However, when information is poorly designed,

problem-solving and decision processes will be ineffective and managers may not understand why.

A good management information system is, therefore, needed in all the educational institutions to handle more efficiently such administrative matters as providing government reports, justification and accountability, handling of increasing enrolment, students records and timely release of results. Educational institutions today need to pay more attention to management of their data and information for efficiency and effectiveness. Information reduces uncertainties and facilitates decision-making (Tricker, 1976).

Information is one of the resources which a manager controls apart from human resources, materials, money and machines. Moreover, researches in various countries confirm that school management information systems increase organizational and managerial effectiveness. After studies done with American school managers, efficiency has increased in decision making at schools where school management information systems are used. In his study where examined effects of school management information systems on working of primary school managers in Australia, managers stated that use of school management information systems has introduced them information technologies and the facilities, lessened their workload and made management process more efficient, helped them use time more efficiently, made teachers feel themselves more important, made them and the teachers wish to improve themselves more, made important changes in education and teaching, and increased the quality of in-school communication. In their study with school managers, Telem and Buvitski (1990) found that school managers believed that school management information systems lead to important changes at school.

According to school managers, this application has increased school standards, helped decisions on the level of control and strategy, increased the quality of teaching programs, facilitated student-teacher interaction, increased the coordination between teachers, facilitated systematic and continuous information transfer to parents, and increased communication with other institutions and the central organization. In his study effects were examined as information systems on school managers of local schools, determine that information systems have largely changed roles of school managers. Managers stated that a manager who does not use the information systems is not able to achieve his duties sufficiently anymore. Lastly, in their studies

they determined that technology leadership of school managers is more important than background in the efficient use of technology at schools (Chapman and Mahlck, 1993).

However, in literature there are researches that show that school managers had problems in using school management information systems. Managers and teachers indicated that while school management information systems had positive effects on evaluation of efficiency of the school, development of using sources, quality of educational programming and in school communication, it increased their workload and caused stress. The research indicated that this stress is reduced in schools where education is sufficiently given on the system and where innovation is clearly stated as a vision. In addition it was found that the staff that used the system had higher motivation, was keen to take more education, and adopted the vision of the school more. Scholars examined the effects of information systems on educational decision making, he found out that school managers have not taken sufficient education on efficient use of the information technologies. Moreover, they found that education increased the possibility to use the information systems.

As a result, there was a correlation between the amount of education the managers took, and the use of information technologies. As a result, it can be stated that school managers had to take over the responsibility of leadership in an unfamiliar area without sufficient education.

2.3.5. Challenges to the Use of Data

The main challenges to the effective use of data for primary and secondary schools were reported to be: lack of time, particularly time to update and analyze the data, difficulties in applying data to classroom situations, limitations of data, i.e. that the data collected/recorded was too narrow/academic or did not accommodate individual needs, ICT-related issues, e.g. insufficient resources or restricted access. Challenges to the effective use of data for secondary schools were similar to those experienced by primary schools. However, having sufficient trust in the data was also of concern to secondary. Special schools reported two key challenges to the effective use of data: data systems that do not accommodate the complex needs of individual pupils, insufficient comparable data (year-on-year or with similar schools).

2.3.6. Data Management Systems

In order to make more effective use of data schools need systems that are simple to use, are well supported and therefore quickly build levels of confidence and familiarity. All schools wanted data management systems that: are easy to use, produce outcomes that are easy to interpret,

allow flexibility of input, have compatible school management and assessment components, offer comprehensive training and support, are accessible to staff, and encourage engagement and ownership.

For pupils with special educational needs it was considered particularly important to record achievements at a much finer level of detail than was possible with many commercial data management packages, in order to demonstrate and celebrate progress (Telem and Buvitski, 1990).

2.3.7. Information and Communication Technologies (ICTs)

Information and Communication Technologies (ICTs) as defined in the Information & Communication Technology Sector Strategy Paper of the World Bank Group (April 2002) consists of hardware, software, networks, and media for collection, storage, processing, transmission, and presentation of information (voice, data, text, and images).

Used to communicate, create, manage and distribute information, ICTs cover, not only the newer digital technologies of computers, Internet, email, World Wide Web, wireless, etc. but also the older technologies of print, radio and television that have been used extensively in both distance education and classroom instruction. Indeed, as many of the examples illustrate, these "older" technologies are still the mainstay of educational outreach in many parts of the world because the state of infrastructure development has not allowed the same degree of adoption as has taken place in more developed countries. This is often referred to as the "digital divide".

ICTs bring about new opportunities as well as new risks for the goal of sustainable development. Over the last few years the use of ICTs in all sectors of education has increased dramatically – and continues to do so.

Digital technologies have fuelled exponential growth in society's ability to generate, exchange, and consume information. This has had far-reaching effects on economic and social organization. The "knowledge society" is one where growth, development and innovation are driven by the optimal use of information and information products. ICTs are the key enabler of the knowledge society. Those who have easy and affordable access to ICTs and communication networks can participate fully, while those without have fewer opportunities, and remain trapped in pre-knowledge economy forms of economic activity.

Education is, therefore, one of the most important components in creating knowledge societies, economic growth and prosperity. Education is not only the means by which individuals become skilled participants in society and the economy; it is also one of the key drivers in expanding ICT usage.

Seen within the context of the transition to the knowledge society, one of the broad reasons for developing the pervasive use of ICTs within education systems is to address structural problems and deficits in education systems – this can include using ICTs to enhance administrative efficiency. ICT-in-education programs benefit from a strong association with curriculum change processes and other system-wide changes such as moves towards decentralization and school-based management (Tegegn, 2003).

2.3.8. ICTs and Information Systems (IS)

A good understanding of information system concepts requires an appreciation of what a system is: a collection of component parts that include inputs, processes, outputs and feedbacks that are integrated to achieve a specific objective. Thus, an information system (IS) is one that accepts data resources as input, and processes them into information products as output. It refers to 'the collection of computer programs, hardware, people, procedures, documentation, forms, inputs and outputs used to support an organization' (Lassila and Borton, 2004). All information systems use people, hardware, and software to perform input, processing output storage and control activities that transform data resources into information products. The link between an IS (which consists of the elements above and their inter-relationships) and ICT is clear, with the latter being a subset of the former and focuses on the technological component of IS.

Within the organizational context, the boundary or scope of an information system (IS) includes the human component (represented by IS personnel) and the IT component (represented by software, hardware, storage and networking) (Moses, 2001). EMIS management, therefore, invariably makes use of ICT tools. Information system specialists are people who develop and operate information systems.

2.3.9. Types and Elements of Information Systems

Information systems can be classified as Transaction Processing Systems (TPS): computerized system that performs and records the daily routine transactions necessary to conduct the business,

Management Information Systems (MIS): serve the functions of planning, controlling, and decision making by providing routine summary and exception reports. They serve middle management and can include on demand "standard" reports. MIS systems normally draw data from TPS and Decision Support Systems (DSS): those that combine data, analytical tools, and models to support semi-structured and unstructured decision making. Used by all levels in the organization. DSS systems may be stand-alone or they may draw data from TPS and/or MIS systems (Telem and Buvitski, 1990).

2.4.10. The Context and Importance of Capacity Building and Management

From the Agenda 21 plan of action following the United Nations Conference on Environment and Development in 1992, the concept of capacity building has gained increasing acceptance as being of fundamental importance to the delivery of 'development' objectives. Capacity building encompasses a country's human, scientific, technological, organizational, institutional and resource capabilities', in addition to enhancing the ability to evaluate and address the crucial questions related to policy choices and modes of implementation'.

All too often broad definitions of capacity building tend to get reduced in practice to mean enhancing the skills of a particular cadre of people, and in education systems this most usually means the teachers and administrators. However, if successful change management programs involving new technologies are to be introduced, it is of critical importance that all of the key participants are involved.

At the World Education Forum held in Dakar in 2000, one of the key recommendations was to make deliberate efforts in harnessing and using ICTs to support EFA goals at an affordable cost. Since EMIS and EFA are two interlinked processes, by addressing ICTs in EFA, parts of the EMIS aspect are also addressed. One can think about statistical data, infrastructure and quality management and training of administration personnel as just some of the cross-cutting areas. Connectivity to schools is another example – ICTs can substantially improve the efficiency and speed of data collection from schools and reduce the amount of effort spent on administrative functions.

2.4. EMIS Success Factors

Tegegn(2003) identified three important factors for the success of EMIS. These are: political commitment, good governance, and strong management. On top of this EMIS will involve

several things that are critical to success: such as standard for information, set timing, define the level of possible accuracy, reports should be the result of daily activities not special purpose efforts, define formats clearly, so that people get used to and understand how information is presented, ensure that the providers of information quickly see the results of their work, and measure the cost of producing information (Moses, 2001).

On the other hand, Hua and Herstein (2003) identified the three key measures of EMIS success: time and relevance of data and information: data integration and data sharing among departments, effective use of data and information for education policy decisions.

2.4.1. Dimensions and Quality of Data/Information

Source of information used in organizations range from formal to informal, internal to external in varying degrees depending upon individual needs and preferences. However, all types of information sought by managers can be viewed along three dimensions: Content, presentation, and timing (O'Brien, 2003). Curt, and others (2006), however, has extended it into four by adding scope. Since scope included under content: it is not worth treating it separately. The other three were discussed below.

Content: The type of information conveyed and what it tells us. Managers need to be aware of the type of information presented to them so that they can assess its value in the correct context. Content includes accuracy, relevance, completeness, conciseness, scope, and performance.

Form: The form information takes can have significant impact on the way it can be handled by the recipient. The presentation of information needs to consider clarity, detail, order, media, qualitative or quantitative, formal or informal and structured and unstructured.

Timing: Having established the content and presentation of the information there is a need to consider when it is available. Information is produced is required at different time intervals, some on regular basis, and some as the necessity arises. Managers should understand what time period is covered by a piece of information.

It is important that managers understand the nature of the information they receive. By understanding its nature, it is possible to balance its importance and relevance to specific situation. Without such an understanding a manager might give undue weight to inaccurate or irrelevant information.

Having looked at the types of information available in organizations there is a need to consider what characteristic might be desirable in that information, and the data on which it is based. To be useful, information must have essential attributes both as individual items and as set of information. People want information of high quality that is information products whose characteristic attributes or qualities make the information more valuable to them.

Quality is defined as excellence or fitness of the system in serving the purpose for which it was developed (Davis & Olsen, 1985; Ivanol, 1972; & Powell, 1999). Data are of high quality if they are fit for their intended uses in operational decision making and planning. In other words, data/information is deemed of high quality if they correctly represent the real world construct to which they refer. Thus, data quality depends on its actual use.

Data/Information quality attributes are multidimensional. A considerable amount of data quality involves investigating and describing various categories of desirable attributes of data/information. Davis (1994) as well has mentioned data quality characteristics as accessibility, timeliness, accuracy and precision, relevance and validity, and completeness. Wilson (1996) and Oz (2002) also have identified relevance, completeness, accuracy, clarity, and timeliness. As it is apparent from the various authorities' description of data/information quality, all the attributes are more or less the same. Accuracy, completeness, relevance and timeliness seems inclusive and common to all.

Accuracy: A helpful measure of accuracy is error rate and it is essential to keep errors to a minimum, inaccuracy takes two forms: Bias and error. May well be a function of the way original data was generated, gathered, processed or presented. Random error is inaccuracy that arises from inherent variability, but the more accurate the information the more it contributes to decision-making (Curt and others, 2006).

Timeliness: Information must be available when needed. Otherwise it may be considerably less useful or useless. This means that time must be allowed to gather and process the necessary information and data (O'Brien, 2003).

Appropriateness: Above all information should be appropriate for its intended use. There are four main issues to consider: the completeness of information, the level of detail required, the

level of summarization required and the relevance of the information to its recipient (O'Brien, 2003).

Poor data quality can have a severe impact on the overall effectiveness of an organization. Davis and Oslen (1985) have warned that since information is a critical resource, low quality information has adverse effect on organizational performance. The quality of a product depends on the process by which the product is designed and produced. Likewise, the quality of data depends on the design and production process involved in generating data. The authors attribute the cause of poor data quality to activities involved in the process of data/information production. This indicates the need to take care while data/information system activities are implemented. In addition, quality assurance or control of information is critical.

According to Chapman and Mahlch (1993), there are four primary threats to data quality: (i) errors and omission in reporting data, (ii) errors in transferring and summarizing data, (iii) errors in the treatment of missing data, and (iv) Lack of consensus about data definition. Indeed, data quality could be affected by the formats of the questionnaire, personnel involved in completing questionnaire, processing and analysis of data and data flow. These are factors could be categorized as error and bias factors. The source of error could be random or capacity problem. Bias is the one that comes as a result of external factors like incentives or sanctions resulting from figure increment or decrement; and as a result of the existing culture. For instance, there is a prevailing practice of reserving some number of students in each class while the beginning of enrollment report so that it could replace dropouts that could happen in the future. On the contrary, there is a case when student number is increased if budget release is based on student number.

2.4.2. Timely and Reliable Production of Data and Information

According to Hua and Herstein (2003) timely production of data and information requires that there be a shared understanding of the following by all potential data and information producers, users, or clients: EMIS data produced regularly must meet the needs of educational services, such as the logistics unit and other units of school suppliers; the needs of educational monitoring and evaluation, and policy research and guidance in timely fashion and the needs of international collaboration and communication.

The timeliness of meeting these needs within the ministry of education is critically important. Obsolete data, even after produced, may not have much value for user, resulting in missed intervention opportunities and a pervasive distrust from information clients within or outside the organization. To guarantee timely production of data and information to meet these needs, the process of data collection, data entry, data processing, data interpretation, data analysis, and data reporting should be short, efficient, and productive (Oslen, 1985).

Besides, the reliable production of data suggests that EMIS data, once produce, must reliably report a "current reality or status" or "trend of change" of educational development of the country, district, or school. It means that policy-makers, planners, budget-makers, field educational officers, principals, teachers, parents, and students can trust the data and data source. To win such a trust data collection must be treated as a scientific process of fact finding.

Generally, both timelines and reliability can affect the level of information user confidence and trust in the data delay in data production and/or production of unreliable data can easily lead to lack of data use and management frustration, resulting in ineffective planning and budgeting, monitoring and evaluation, policy analysis, and policy making. When data and information users (e.g policy makers, analyst) lose faith in EMIS's ability or credibility, they often discourage support for maintaining, strengthening, and updating the EMIS system (O'Brien, 2003).

2.4.3. Data Integrating and Data Sharing among Departments

According to Hua and Herstein (2003) data integration is one of the most important EMIS development strategies. It means that data from multiple sources (payroll, achievement, and school census), multiple years, and multiple levels (student, teacher, or school level) can be linked, integrated, or merged. Data integration is intended to add value to the data that are already collected and available in various scattered places within the same system. Data integration is a must occur before an educational policy analysis or planner can conduct a high level and high quality policy analysis or planning exercise.

Clearly, we must integrate the data from multiple sources so that we can conduct the right policy questions. Multi-level data from multiple sources and years, once centrally integrated and organized, could have a tremendous value for policy-relevant research and analysis and improvement in education management (O'Brien, 2003).

2.4.4. Effective use of Data and Information for Policy Decisions

One of the most critical factors that contribute to the success of EMIS development is an institutional culture of making policy decisions based on data and information. This culture is a user demand-enabling environment under which the policy research and analysis capacity can be built, strengthen, and further developed. Policy makers, planners, policy analysts, and other high stakeholders are the users of the data and information. The demand for using data and information should stimulate and nurture the healthy development of an information-based decision-making culture and the EMIS system (Hua and Herstein, 2003).

To sum up, different authors classified success factors of EMIS in different ways based on their perspectives. For instance, Tegegn has attempted to classify EMIS success factors related government responsibilities where as Hua and Herstein classified it by relating with information/data production and use. So, various stakeholders can use these success factor based on their interest and the situation.

CHAPTER THREE

3. Research Design and Methodology

This part of the study presents the description of the subject of the study, methodology, procedures of instruments development, the procedures employed in the data collection, variables designation, and methods of the analysis of data.

3.1. Research Method

To realize the objective of the study, descriptive survey method was employed in this study. The reason is that as cited by Best and Khan (1996), surveys concern with the generalized statistics that result when data are abstracted from a number of individual cases. Similarly, Cohen, and Manon (1994) contented that survey inquiry gathers data at a particular point with intention of describing the entire nature of existing conditions. Moreover, Description emerges following creative exploration, and serves to organize the findings in order to fit them with explanations, and then test or validate those explanations. Descriptive research answers the questions who, what, where, when, the status quo, and how... Descriptive research can be either quantitative or qualitative (http://ecommons.txstate.edu/polsfacp/39/, DEC 2010).

To sum up, descriptive research is unique in the number of variables employed. Like other types of research, descriptive research can include multiple variables for analysis, yet unlike other methods, it requires only one variable (Borg, 1985). Moreover, the descriptive function of research is heavily dependent on instrumentation for measurement and observation (Borg, 1985). Researchers may work for many years to perfect such instrumentation so that the resulting measurements were accurate, reliable, and cumbersome.

3.2. Data Sources

Both primary and secondary sources of data were employed in the study. Because triangulation is often used to indicate that more than two methods is used in a study with a view to double (or triple) checking results. This is also called "cross examination". Primary source is obtained directly from the respondents such as directors, vice directors, unit leaders, school supervisors, WEO, WEOCPO, Woreda supervisors, ZEO, ZEOCPO, and Woreda, and zone statisticians. But, secondary data were obtained from documents at each school, woreda, and Zone Education offices.

3.3. Sample and Sampling Technique

The study was intended to include the whole education system of Jimma Zone. However, since it was difficult to consider all education system of the zone due to time, budget, and manpower the target population was selected from secondary schools, preparatory schools, education office of the Zone, the education bureau of 18 woredas in Jimma Zone.

In Jimma Zone there are 18 woredas, one city administration that is Agaro, 28 secondary schools (SS), 7 preparatory schools (PPS). Since the study focus on the effectiveness of Education Information System (EIS) in the management of secondary schools; the target participants of the study were school leaders, vice principals, internal and external supervisors, unit leaders, PTA (Parent Teacher Association) from each schools, woreda education officers and from zone; Zonal education officer, woreda education office core process owners(WEOCPOs), Zone education office statisticians', EIS (ICT department as a whole) were also included in the study.

The sample population was selected according to the following procedures and methods.

In order to reduce the expense of time and cost the sample was made step by step. First, the study area that is Jimma Zone was selected as per the report of OEB(2009) abstract stated in the statement of the problem part above; and the woredas were classified as strata of classes as mentioned on the annual abstract of the zone education office. Then about 8(45%) of woredas in this zone were included that is from Class A (2 woredas), class B (4 woredas), and class C (2 woredas) depending on their job performance, increasing students result, facilitating conducive environment for smooth teaching and learning processes of 2009/10 as mentioned by letter from JZEO issued on date 3/6/2010 ref no. GJ/5-349/67/35. The reason why 2 woredas from class A, 4 woredas from class B, and 2 woredas from class C was to make the distribution fairly proportional. Accordingly, woredas and schools from class A; woredas and schools selected from class B and woredas and schools from class C with their respective education officers, statisticians, ZEO officers, EIS-owners (ICT department), core process owners were included in the study by using purposive sampling method. Because all the available stakeholders on this above mentioned position were included in the study as they were a role play of EMIS.

For this purpose considering strata of woredas made as per a letter from JZEO issued on date 3/6/2010 ref no. GJ/5-349/67/35 is an appropriate method to increase representation of the woredas. By using simple random sampling target woredas were selected from each stratum.

Similarly, Agaro city administration, Dedo, Kersa and Mana were randomly selected from class B. Four woredas were selected from this class because when we compare the number of woredas in their respective classes; class B contains nine woredas that is about 50% of the total woredas in the zone. So, to make the distribution fairly proportional proportionate sampling technique was used thus, four woredas were randomly selected. Since class A and class C holds 25% of the woredas each in the zone; two woredas: Tiro Afata, and Omo Nada were selected randomly from class A, and finally, two woredas namely Seka Chokor and Goma were selected randomly from class C.

All secondary schools, preparatory schools, woreda education officers of the sampled woredas were included purposely in the study using an availability sampling. Although selection may be unguided, it probably is not random, using the correct definition of everyone in the population having an equal chance of being selected. The total number of the sample population was presented in the following Table 1.

Table1: Sample Population for the Study

Rank according to their performance (2009/10)	Class	Sampled Woredas							
		Name of WEO	No of SS	No of PPS	No of SCL	No of VP	No of PTA	No of SV	No of UL
1	A	O/Nada	3	1	4	8	5	2	7
2		Tiro Afata	2	0	2	4	5	2	4
6	B	Agaro City Administration	1	1	2	4	5	2	4
8		Dedo	2	0	2	4	5	2	4
10		Kersa	1	0	1	2	5	2	2
12		Mana	2	0	2	4	5	2	2
15	C	Seka Chekorsa	1	0	1	2	5	2	2
17		Goma	2	0	2	4	5	2	4
Sub Total sample from secondary schools			14	2	16	32	40	16	29
								Total sample from secondary schools	149

In addition to the above mentioned sample all Woreda Education Officer(WEO), Woreda supervisor, Woreda Education Office Core process Owner(WEOCPO) which is the former vice woreda officer, Zone Education Head(ZEH),Zone Education Office Core Process Owner(ZEOCPO), ICT department of ZEO(Zone Education Office), Woreda and zone statisticians, and Zone Planning department were included purposely in the study by using purposive sampling method because, they are the main actors and stakeholders of EIS and decision makers in the education system. The reason why purposive sampling followed by availability sampling were used was that, the researcher had the assumption in his mind that those stakeholders are appropriate to get information/data intended.

3.4. Data Gathering Tools

The researcher used questionnaires, interview, document analysis, FGD, and observation to collect relevant information from sample populations. Because employing multiple data collection helps the researcher to combine the strength and some of the inadequacy of any source of data (Brewer, 1989 and Patton, 1987) in Teshome (1998). Two types of questionnaire: some open ended, and many closed ended were devised. These questionnaires were distributed for schools, WEO, and ZEO to collect in-depth information concerning the effectiveness of EMIS and its challenge. The reason for the selection of questionnaire as a data gathering tool is because

it is the appropriate instrument to obtain variety of opinions within a short period of time from a large population and also helps respondents to express their opinion views freely. The questionnaires' questions consists of characteristics of respondents, demand and supply of information, EMIS and training, school management, and EMIS success factors.

Interview: This instrument was employed to collect further information on the effectiveness of EMIS, and its challenges. A face to face interview with semi-structured questions were held with school principals, vice principals, WEOs, and WEOCPOs. In addition to these respondents PTA members from target schools were also interviewed. In this regard, Kamar (2005) argued that Semi structured interview permits an average flexibility so that the interviewer could make a minor modification where needed.

Focus group discussion (FGD): According to Miller and Brewer (2003) FGD was used because it has a real benefit of sharing views, experiences, stories between participants, and of acquiring the insight full and reach data from participants. So, this instrument was employed to collect data from principals, vice principals, unit leaders, PTA members, and internal supervisors before they get into questioner. This tool was used to get the general information and image of the school, woreda, and zone as a whole. The instrument was also used to aware the purpose and use of the study for the school and the school community.

Document Analysis (DA): Kamar (2005) in his book states that "the analysis of the content of records documents and other printed materials constitutes the second use of survey to collect facts for a research study". Due to this, document analysis was also became one of the instruments of data collection. Documents, records, minutes of meetings were seriously seen to crosscheck the respondents' response validity.

3.5. Procedures of Data Collection

A survey of questionnaire was designed and piloted in three secondary schools such as Jiren secondary school, Seto Semero secondary school, and Jimma University community school. The questionnaire was filled by three principals of these schools, six vice principals, twelve unit leaders, and six internal supervisors. After that, structured questionnaires were tested for content validity by experts of staffs of EDPM department of Jimma University. Interview questions were also given face to face to the target respondents of these schools. The validity of these tools were

calculated by using coefficient of correlation as it was discussed under the sub-title of pilot study part.

3.6. Methods of Data Analysis

Different methods of data analysis which are relevant to each variable or component were used to examine the qualitative and quantitative researches. The data that was collected through closed ended questionnaires was tallied and completed using percentages correlation study, weighted means. Data obtained from open ended questionnaires, interview, and focus group discussion and document analysis were carefully examined and studied qualitatively. The strength of the conclusions about group differences or relationship among variables was supported by different statistical tools. Accordingly chi-square (λ^2), ONE WAY ANOVA, and t-test were applied.

The chi-square (λ^2) analysis was employed to test the significance difference between the proportion of respondents who were favorable and those who were unfavorable towards the variables. Such a test of proportional differences was also carried out between respondents with a positive and negative evaluation of the variables considered (Sudman and Bardburn, 1982). In the other way round ANOVA is used to check the significance difference among the whole groups in general. All differences were tested for statistical difference at 0.05 levels.

Finally, those problems of data manipulation and interpretation were solved by a data analyzing software called SPSS (Statistical Package for Social science), quantitative data were analyzed quantitatively and lastly conclusion and recommendation were given.

3.6. Pilot Testing of the Instrument

Data collection instruments such as questionnaire, and interview were piloted and distributed to secondary and preparatory schools in Jimma city administration which were not included in the study. These schools were Seto Semaro, Jiren secondary school, and Jimma University community schools; to check whether the tools can generate the expected information for the respondents and to consider their consistency to the study. The instrument for pilot study consists of 111 items to be responded on a five point scale. These instruments were tested on 30 (Male=19, and Female=11).

The pearson product moment correlation was calculated for odd and even numbered items of the 111 items for reliability using half method (Yalew, 2006) resulting a coefficient of 0.849. As

regarded to the internal consistency of the items, a reliability estimate was calculated using Spearman-Brown formulae resulted with an index of 0.9183. This clearly indicates that the instruments designed were 91.83% reliable. On the other hand, Spearman-Brown formula is one that empirical researchers strongly support its usefulness and accuracy (Payne, 1992).

CHAPTER FOUR

4. Data presentation, Analysis and Interpretation

This section of the study presents the analysis and interpretation made of the data collected from school directors, vice directors, unit leaders, school supervisors, WEO, WEOCPO, ZEH, ZECPO, woreda and zone statisticians. It is categorized into two major parts. The first part presents the profile of sample respondents in terms of their job experience, educational qualification, specialization, and training received. The second part teats the type of information demanded and supplied adequacy and quality of information, problems of information management, and strategies for employing information management at school.

About 162 questionnaires were distributed and 153 were filled and collected back so, about 94.44% of the questionnaires were returned. From this 9.8% (15) were school directors, 26.1% (40) were woreda supervisors, 19.6% (30) were vice directors, 14.4% (22) were school supervisors, 4.6% (7) were woreda and zone statisticians, 5.2% (8) were WEO, 5.2% (8) WEOCPO, and 15% (23) were unit leaders. Statistical analysis methods like one way ANOVA, t-test, chi square, correlation coefficient, Lickert scale were used to triangulate the data to make the conclusion and recommendation valid and reliable.

4.1. Characteristics of the Respondents

Before going in to the detail analysis of data, the characteristics of respondents has to be summarizing as follows. This section includes group of respondents, age, sex, and working experience of respondents.

Table 2: Group of Respondents

Respondents	Frequency	Percent
Directors	15	93.75
Vice Directors	30	93.75
School Supervisors	22	95.65
Unit Leaders	23	79.3
WEO	8	100
WEOCPO	8	100
Woreda Supervisors	40	100
Statisticians	7	77.8
ZEO	1	100
ZEOCPO	1	100

Table 2 above shows 93.75% of school leaders, 93.75% of vice directors, 95.65% of school supervisors, 77.8% of woreda and zone statisticians, 79.3% unit leaders were filled the questionnaire successfully. EMIS will succeed if and only if the above respondents committed and integrated. EIS is the result of the performances that each and every respondent contribute for the education system. As the percentage mentioned above shows, most of respondents were committed and patient enough to fill the questionnaire thoroughly.

Table 3: Age and Sex Profile of Respondents

s/no	Respondents	Sex of Respondents					Age of Respondents							
		Male		Female			Less than 25 years		26-35 years		36-45 years		≥45 years	
		F	%	F	%	Total	F	%	F	%	F	%	F	%
1	Directors	15	100	0	0	15	1	6.7	3	20	7	46.7	4	26.7
2	Vice Directors	25	83.3	5	16.7	30	0	0	11	36.7	6	20	13	43.3
3	School Supervisors	21	95.4	1	4.5	22	1	4.5	6	27.3	4	18.18	11	50
4	Unit Leaders	20	87	3	13	23	1	4.3	4	17.4	7	30.43	11	47.8
5	WEO	8	100	0	0	8	0	0	2	25	2	25	4	50
6	WEOCPO	7	87.5	1	12.5	8	0	0	3	37.5	1	12.5	4	50
7	Woreda Supervisors	38	95	2	5	40	0	0	12	30	10	25	18	45
8	Statisticians	7	100	0	0	7	1	14.3	2	28.6	2	28.6	2	28.6
9	ZEO	1	100	0	0	0	0	0	0	0	1	100	0	0
10	ZEOCPO	1	100	0	0	0	0	0	0	0	1	100	0	0

As shown in Table 3 above; the sex of respondents, and their age with respect of the position vested indicated as there was great gap. What was surprising here is that there was no female

director, no female woreda or zone statistician, no female WEO, no female ZEH and ZEOCPO. This shows as it needs further study that it doesn't have any significant effect on this study. To sum up, from the respondents filled the questionnaire 141 (92.2%) were male and 12 (7.8%) were female. This also clearly shows that most of the EMIS activities are carried out by male individuals.

Age wise, as it is indicated in Table 3 above there were no vice directors, WEO, WEOCPO, woreda supervisors with age less than 25 years. This indicates that, this position of EMIS needs experience. But one (6.7%) of the directors, one (4.5%) of the school supervisors, one (4.3%) of the unit leaders and one (14.3%) of woreda and zone statisticians were included in the age range less than 25 years.

In other way round, 7 (46.7%) of the directors age were 36-45 years and this clearly shows us that as the directors were experienced. Moreover, about four (50%) of WEO, four (50%) of WEOCPO, 11 (47.8%) of unit leaders, 13 (43.3%) of vice directors, four (26.7%) of directors, 18(45%) of woreda supervisors and two (28.6%) of the woreda and zone statisticians were aged greater than 45 years. This clearly shows almost the respondents for this research study were within the range of active working age. This by itself has high positive influence on the activities of EMIS that it needs employee with high experience.

4.1.1. Educational Qualification, Work Experience of the Respondents

A right person in a right position, in a right time to do the right thing is a backbone of the success of EMIS in any organization. Therefore, this section is designed to asses and evaluates the qualification of a personnel or respondents and job experiences of the sample respondents at different level in line of their field of study. Since EMIS is a system by itself and needs its own specialty, respondents from school such as school directors, vice directors, school supervisors, unit leaders were assessed. Again respondents from woreda and zone education offices were analyzed according to the following Table.

Table 4: View of Respondents in Job Experience and Educational Background.

Experience and qualification			Respondents															
			Directors		Vice directors		School supervisors		Unit leaders		WEO		WEOCPO		Woreda supervisors		Statisticians	
			F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Job experience in years	Experience in teaching	<5	1	6.7	2	6.7	2	9.0	3	13.0	1	12.5	0	0.0	0	0.0	0	0.0
		6 to 10	1	6.7	2	6.7	6	27.3	2	8.7	0	0.0	2	25.0	6	15.0	0	0.0
		11 to 15	3	20	7	23.3	11	4.5	6	26.0	1	12.5	0	0.0	8	20.0	3	42.8
		16 to 20	3	20	4	13.3	5	22.7	4	17.4	3	37.5	2	25.0	12	30.0	1	11.2
		>20	7	46.7	15	50.0	8	36.4	8	34.8	3	37.5	4	50.0	14	35.0	3	42.8
	In current position	<1	2	13.3	4	13.3	1	4.5	1	4.3	1	12.5	1	12.5	0	0.0	1	14.2
		1	0	0	11	36.7	5	22.7	2	8.7	0	0.0	1	12.5	7	17.5	0	0.0
		2	6	40	14	46.7	5	22.7	9	39.0	2	25.0	3	37.5	10	25.0	3	42.8
		3	2	13.3	0	0.0	3	13.6	1	4.3	4	50.0	1	12.5	12	30.0	1	14.2
		4	3	20	0	0.0	2	9.0	3	13.0	0	0.0	1	12.5	7	17.5	0	0.0
		5	0	0.0	0	0.0	1	4.5	2	8.7	0	0.0	0	0.0	3	7.5	0	0.0
		6	0	0.0	0	0.0	0	0.0	1	4.3	0	0.0	0	0.0	1	2.5	0	0.0
		>6	2	13.4	1	3.3	5	22.7	4	17.4	1	12.5	1	12.5	0	0.0	2	28.4
Educational background (qualification)		TTI	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		Diploma	0	0.0	0	0.0	0	0.0	1	4.3	0	0.0	1	12.5	1	2.5	0	0.0
		BA/BSc	14	93.3	3	100	22	100	22	95.7	7	87.5	7	87.5	38	95.0	6	85.8
		MA/MSc	1	6.7	0	0.0	0	0.0	0	0.0	1	12.5	0	0.0	1	2.5	1	14.2

As shown in Table 4 above, one (6.7%) of directors, two (6.7%) of vice directors, two (9%) of school supervisors, three (13%) of unit leaders and one (12.5%) of WEO were with an experience of less than five years. But there were no WEOCPO, woreda supervisors and woreda and zone statistician with an experience of less than five years. This shows these (WEOCPOs', woreda supervisors', and woreda and zone statisticians') positions needs an experience of at least five years. Moreover, these positions were secured as a result of competition and recommendations by other authorities. But the positions like director, vice director, school supervisor, unit leader and WEO were given simply as a merit. This clearly shows that everybody with BA/BSc/MA/MSc of low experience can be a leader of a school and woreda education officer.

On the other hand, most of the directors six (40%) were of an experience 11-20 years. This contradicts with that of what we have seen in the first paragraph under Table 4. This confirms as those positions need an experience.

Moreover, there were no WEO with an experience of 6-10 years and no WEOCPO with an experience of 11-15 years in this study. But about 20 (50%) of woreda supervisors, 4 (57%) of woreda and zone statisticians, 6 (40%) of school leaders, 11 (36.6%) of vice directors, 10 (43.4%) of unit leaders and 4 (50%) of WEO were with an experience of 11-20 years. As obviously known, an experience is a key and base for any EMIS. So, this clearly shows as experience is very crucial for the success of an organization and the cultivation of EMIS.

As far as the experience of the current position were concerned: two (13.3%) of the directors, four (13.3%) of the vice directors, one (4.5%) of the school supervisors, one (4.3%) of the unit leaders, one (12.5%) of the WEO, one (12.5%) of the WEOCPO, and one (14.2%) of the woreda and zone statisticians were of an experience less than one year experience. So, this clearly shows that they are new and fresh for this position. If an individual is new, therefore the work place and the environment and the system may challenge the individual. As a result of internal and external influences definitely the EMIS will be fruitless. Moreover, 8 (53.3%) of the directors, 14 (46.7%) of the vice directors, 8 (36.3%) of the school supervisors, 10 (43.3%) of the unit leaders, 6 (75%) of the WEO, four (50%) of the WEOCPO, 22 (55%) of the woreda supervisors, and 4 (57%) of the woreda and zone statisticians were with 2-3 years experience in current positions. There were no director, vice directors, WEO, WEOCPO and woreda and zone statistician with a current position with 4-6 years. This implies that the turnover in those positions was highly observed. This turnover is a great loss for education system, and hence EMIS lacks reliability and consistency.

Concerning qualification, even though the position needs MA/MSc; almost all are qualified with BA/BSc/BEd. There was no one with qualification TTI. But one (4.3%) of the unit leaders, one (12.5%) of the WEOCPO, and one (2.5%) of the woreda supervisors were under qualified. Those individuals were graduated with diploma that is not required in these positions. Being under qualification may have its own negative impact on the achievement or success of the goals, and objectives of an organization. Because an individual will be competitive and able to do an activity only if he/she is qualified or a right person at a right place.

Again when we see directors 14 (93.3%) of them, 30 (100%) of the vice directors, 22 (100%) of the school supervisors, 22 (95.7%) of the unit leaders, 7 (87.5%) of the WEO, 7 (87.5%) of the WEOCPO, 38 (95%) of the woreda supervisors, and 6 (85.8%) of woreda and zone supervisors were BA/BSc/BEd holders. Since their current position needs MA/MSc/MEd, still all of these individuals were under qualified.

4.1.2. Field of Study of Respondents

The field that and individual specialize obviously will affect the activities that he/she performs. This indicates that individuals have to be assigned according to the skill and knowledge required. Thus the following Table summarizes the field of study of the respondents.

As it is indicated in Table 5 below, only one (6.7%) of the directors, one (33%) of the vice directors, one (4.5%) of the school supervisors, one (4.3%) of the unit leaders, one (12.5%) of the WEO, two (25%) of the WEOCPO, two (5%) of the woreda supervisors, were trained or graduated in educational planning and management which is highly related with EMIS. This clearly shows us respondents were assigned in those positions or on current positions arbitrarily without considering their area of specialty.

Moreover, matching educational level or field of study and qualification with the task requirement should be the priority consideration in selection recruitment of employees. What was observed from the findings of the study deviated from this principle. Thus, the assignment of personnel in EMIS position does not appear to consider field of study.

Table 5: View of Major and Minor Fields of Respondents

	Subjects they studied	Respondents															
		Director		Vice director		School supervisors		Unit leaders		WEO		WEOCPO		Woreda supervisors		statisticians	
		F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Area of qualification(Major)	Afan Oromo	0	0	5	16.7	1	4.5	2	8.7	0	0	1	12.5	5	12.5	0	0
	Amharic	1	6.7	2	6.7	0	0	3	13	0	0	0	0	3	7.5	0	0
	Biology	1	6.7	1	3.3	3	13.6	4	17.4	0	0	0	0	4	10	0	0
	Bio lab	0	0	0	0	0	0	1	4.3	0	0	0	0	0	0	0	0
	Chemistry	2	13.4	2	6.6	4	18.2	3	13	3	37.5	1	12.5	5	12.5	1	14.3
	Comp Geo	0	0	0	0	1	4.5	0	0	0	0	0	0	0	0	1	14.3
	English	3	20.1	9	30	4	18.2	5	21.7	1	12.5	2	25	5	12.5	3	42.8
	Geography	2	13.4	2	6.6	0	0	0	0	1	12.5	0	0	3	7.5	1	14.3
	History	1	6.7	8	26.7	3	13.6	2	8.7	1	12.5	1	12.5	5	12.5	0	0
	Maths	1	6.7	0	0	1	4.5	2	8.7	0	0	0	0	5	12.5	0	0
	Maths & EDPM	1	6.7	1	3.3	1	4.5	1	4.3	1	12.5	2	25	2	5	0	0
	Physics	1	6.7	0	0	3	13.6	0	0	0	0	0	0	3	7.5	0	0
	Urban Mgt	2	13.4	0	0	1	4.5	0	0	1	12.5	1	12.5	0	0	1	14.3
Area of qualification (Minor)	Afan Oromo	1	6.7	2	6.6	3	13.6	4	17.4	0	0	0	0	3	7.5	1	14.3
	Amharic	2	13.4	9	30	1	4.5	1	4.3	1	12.5	2	25	4	10	2	28.6
	Biology	0	0	0	0	0	0	0	0	1	12.5	0	0	0	0	0	0
	Chem Phy	1	6.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Chem	1	6.7	1	3.3	3	13.6	4	17	0	0	0	0	4	10	0	0
	English	0	0	5	16.7	1	4.5	5	21.7	0	0	1	12.5	6	15	0	0
	Eng/Phy	1	6.7	0	0	1	4.5	0	0	1	12.5	1	12.5	2	5	0	0
	Geography	1	6.7	8	26.7	3	13.6	2	8.7	1	12.5	1	12.5	5	12.5	0	0
	History	3	20.1	2	6.6	0	0	0	0	1	12.5	0	0	3	7.5	1	14.3
	Infrastructure	1	6.7	0	0	0	0	0	0	1	12.5	1	12.5	0	0	1	14.3
	Maths	3	20.1	2	6.6	7	31.8	3	13	2	25	1	12.5	8	20	1	14.3
	Physics	0	0	1	3.3	1	4.5	3	13	0	0	1	12.5	5	12.5	0	0
	Structure	1	6.7	0	0	1	4.5	0	0	0	0	0	0	0	0	0	0
	Not mentioned	0	0	0	0	1	4.5	1	4.3	0	0	0	0	0	0	1	14.3

4.1.3. EMIS Training Given

As stated by Tegegn (2003), Training is one of the essential components of EMIS. Because the field of technology is changing fast and manpower turnover is high, training must be viewed as continues activity, and one that management needs to pay greater attention to. It is also an all round activity because the system is empowered by each components working with the other in

achieving environment to make the vision happen. The implication is that there is a high need of updating the personnel for dynamism.

Table 6: The Responses of Respondents on EMIS Training Given

Items	Respondents															
	Directors		Vice directors		School supervisors		Unit leaders		WEO		WEOCPO		Woreda supervisors		Statisticians	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Satisfied	4	26.7	7	23.3	5	22.7	6	26.1	3	37.5	3	37.5	10	25	1	14.3
Unsatisfied	7	46.7	13	43.3	11	50	9	39.1	5	62.5	4	50	19	47.5	4	57.1
Kept Silent	4	26.6	10	33.3	6	27.3	8	35	0	0	1	12.5	11	27.5	2	28.6

Table 6 clearly shows us that 98 (64.1%) of the respondents were took different trainings given by ZEO and regional education bureau. As replied by the respondents one (0.7%) of the the areas training given was on disciplinary problem, 17 (11.1%) were replied as training given on EDPM, one (0.7%) were on foundation of management and supervision, three (2%) were on management, 11 (7.2%) were on school management. And also about 12 (7.8%) took training on teaching methodology. But from 153 respondents 99(64.7%) were not replied whether the training was given rather they simply kept silent. As it was indicated on this Table above: about 72(47.1%) responded as they were not satisfied with the training given. But only 39 (25.5%) were satisfied with that of the training given.

In a nut shell, the reason that made respondents not be satisfied was also be collected and analyzed. Their reasons were because they are not trained in leader ship, because of low salary, due to environmental influences, they are not qualified in EDPM, it is difficult activity, it is hard to lead, and lack of facilities were the major reasons. Moreover, the reason why they kept silent was also analyzed through interviews. Most of them were kept silent due to fear that this may lead to some hazardous problems.

In other way round, as indicated in Table above 4 (26.7%) of one the directors, 7 (23.3%) of the vice directors, 5 (22.7%) of the school supervisors, 6 (26.1%) of the unit leaders three (37.5%) of

the WEO, three (37.5%) of the WEOCPO, 10 (25%) of the woreda supervisors, and one (14.3%) of the zone and woreda statisticians were satisfied with the training given.

To sum up, Table 6 clearly shows that most of the respondents were not satisfied with that of the training given. When we compare the figure that shows as the respondents were unsatisfied together with those who have kept silent with satisfied; the figure that shows satisfied is insignificant. So, from this it is possible to extrapolate that due to different factors the training given was not clearly addressed the need of workers in this sector.

4.2. Analysis of Bodies that Demand Information from/to School

It is important to note that all managers of educational information should focus on users' needs and expectations. The nature of the information and the ways in which it is provided should therefore be tailor made for each level in the education system. As cited in Cassidy (2005) educational system database supply information to different stakeholders and similarly demands information from different bodies. So, the following Table tries to analyze those stakeholders who need information from schools, and education system as a whole.

Table 7: Respondents View on Information users Demanded from School

S/No	Respondents	Rating Scales										Statistical Results	
		Very		Low		Medium		High		Very high			
		F	%	F	%	F	%	F	%	F	%	Mean	St.Dev
1	WEO	0	0	4	2.4	36	23.5	76	49.7	37	24.2	3.95	0.764
2	PTA	22	14.4	26	17.0	74	48.4	26	17.0	5	3.3	2.78	1.001
3	Decision-Makers	1	0.7	52	34.0	29	19.0	43	28.1	28	18.3	3.29	1.141
4	Policy Makers(ICDR)	14	9.2	26	17.0	8	5.2	65	42.5	40	26.1	3.59	1.290
5	Zone education office	3	2	1	0.7	67	43.8	63	41.2	19	12.4	3.61	0.787
6	Regional Education Office	2	1.3	3	2	74	48.4	54	35.3	20	13.1	3.57	0.793
7	Parents and Community	38	24.8	2	1.3	54	35.3	51	33.3	8	5.2	2.93	1.247
8	NGOs	70	45.8	18	11.8	24	15.7	24	15.7	17	11.1	2.35	1.461

(1=very low 2=low 3=medium 4=high 5=very high) Grand mean 3.2

As it was stated on Cassidy (2005), better data leads to better plans and policies, which lead to better practices. Better data is the necessary input to a decision-making but not a sufficient one; Better data have to be supplied to school and demanded to/from the school. So, the above Table 7 shows the analysis of data/information users /demanded from the school. As it was indicated on this Table about 113 (73.9%) of the respondents responded that Woreda Education office (WEO)

demanded or supplied data to school. This clearly shows as obviously the schools and WEOs are highly related and integrated as a system.

Moreover, no one responded as the demand/supply of information between the school and the WEO was very low. About four (2.4%) responded as low, about 36 (23.5%) responded as medium, about 76 (49.7%) or the most responded as there were high relationship, and about 37 (24.4%) were responded as there were very high relationship between school and Woreda education offices in general. The mean of the responses responded were about 3.95 which means nearly demand/ supply of information highly took place between school and Woreda education offices.

In other way round; about 22 (14.4%), about 26 (17.0%), about 74 (48.4%), about 26 (17.0%), and about five (3.3%) of respondents were responded as very low, low, medium, high, and very high respectively about the relationship between PTA (parent teachers association) and the school on data/information during demand and supply. The mean of this analysis were 2.78 which is nearly medium. This clearly shows that as there were not this much high relationship between the school and PTA. This contradicts with the fact that PTA is the bridge that links the schools and the community. The weak relationship among the school and the PTA resulted in gap of information between school and the community. This highly affects the success of EMIS as a whole.

As stated by different scholars information is the processed data that can be used as a base/guide for decision making. So, concerning decision making about one (0.7%), about 52 (34.0%), about 29 (19.0%), 43 (28.1%), and about 28 (18.3%) of respondents were responded as very low, low, medium, high, and very high respectively. The mean or averages of response concerning decision makers were 3.29 which are nearly medium. This shows that the decision makers were invited on certain issues in medium frequency. This again indicates that decision made were centralized or really democratic.

Even policy makers or ICDR(Institute of Curriculum Development and Research) were also treated inline of the actual EMIS running in grass root level. So, about 14 (9.2%), about 26 (17.0%), about 8 (5.2%), about 65 (42.5%), and about 40 (26.1%) of respondents were responded as very low, low, medium, high, and very high respectively, of demand and supply of

data/information for policy makers on average 3.59 shows the demand and supply of information from school for policy makers were almost high. This shows that schools and EMIS at school level were basic for planers and decision makers.

To sum up, the demand and supply of information from or to schools to different organs were analyzed. When we see Table 7 as a whole, the relationship between school and NGOs were low which is about 2.35 on average. Similarly, on this Table again the relationship among school and parents and community were also almost low or rarely medium. But this much relation is not sufficient for the development of EMIS at school level. The community and parents role in school and education sector as a whole have to be very critical.

As stated on education sector blue print schools are accountable to woreda education offices. Woreda education offices are accountable for zone education office. And similarly zone education offices are accountable for regional education Bureau. When we see the demand and supply of EMIS; about three (2%), and about one (0.7%), about 67 (43.8%), about 63 (41.2%), and about 19 (12.4%) of respondents were responded as very low, low, medium, high, and very high respectively on average about 3.61 of the respondents agreed on the accountability and relationship between these systems and subsystems were high. This indicates that as there were high demand and supply of EMIS along their hierarchy. This again shows that the flow of EMIS data/information flow were smooth and important

4.2.1. Student and Personnel Related Information

According to UNESCO (2006), educational authorities routinely collect information on schools as part of their regular operations. Such data include location of school, condition of school facilities, number of grade offered, numbers of students by sex and age, numbers of repeaters, numbers of teachers by sex and qualification. Inline of these the following Table is intended to summarize student related, teacher related, class size with respect to the standards set.

Table 8: View of Respondents on Student and Personnel Related Information

S/no	Items Data/information Student Related	Statistical measure Mean	St.Dev
1	Information on leaning achievement	4.08	1.167
2	Information on student performance	4.00	1.230
3	Information of repeaters	3.41	1.216
4	Standardized students' achievement	3.69	1.108
5	School age population	3.80	0.772
6	Students' promotion policy	3.65	1.258
7	Disabled students' manual	2.90	1.304
8	Ground rules and regulations	4.01	0.997
9	Students dropout	4.02	0.971
10	Information on politics	3.34	1.299
No	**Personnel or teacher related**	Grand mean=3.69	
1	Supervisors report	3.88	0.83
2	Teachers' qualification, experience etc	4.21	0.816
3	Teachers efficiency	3.84	0.773
S/no	**Class size(standard ratio)**		
1	Class size with respect to standard	3.39	1.283
2	Student class ratio	3.58	0.894
3	Student teacher ratio	3.67	1.155
4	Student text ratio	3.93	0.822

As per the result in Table 8, it could be possible to analyze different types of information are needed by the school and other organs. Information related to students were analyzed as about 13 (8.5%), about two (1.3 %), about 14 (9.2%), about 55 (35.9%), and about 69 (45.1%) respondents replied very low, low, medium, high, and very high respectively on information on learning achievement of children by subject, grade, etc. The mean= 4.08 or almost 4 shows that information on learning achievement of children by subject and grade were high. This indicates more that as the objective (high) priority was given for learning-teaching process.

Information on repeaters by grade, sex, and age is also another dimension that has to be seen. So, about 13 (8.5%), about 9 (5.9%), about one (6.5%), about 54 (35.3%), and about 67 (43.8%) of respondents replied as very low, low, medium, high, and very high respectively on information on repeaters by age, sex, and grade, on average =3.41 or almost the demand and supply of EMIS particularly information on repeaters were high and very high because these information is base for any planning of EMIS, since it is a loss or opportunity cost in education system. As it was

analyzed more through interview concerning repeaters is that most of the students want to repeat to score good grade which is not good because of wastage of time, material, and the like.

Concerning standardized students' document about 11 (7.2%), about 32 (20.9%), about 23 (15%), about 58 (37.9%), and about 29(19%), replied as very low, low, medium, high, and very high respectively, on average=3.69 which clearly shows that the students' standardized documents were demanded or/and supplied almost highly. But surprisingly the schools had their own formats to collect or to send data for stakeholders. But as far as this study was concerned there were no standardized or predefined format that was given for students or woreda education offices to demand or/and supply of information.

Ground rules and regulations inline of EMIS were also analyzed in this study. The study, however has found out that about one (0.7%), about three (2%), about 60 (39.2%), about 19 (12.4%), and about 70 (45.8%) were responded as very low, low, medium, high, and very high respectively on average= 4.01 which is almost high and very high. This clearly shows that rules and regulations are very important for schools and education system to enhance or facilitate EMIS. Even though rules and regulations are very important for the success of EMIS, about 4 (2.7%) of respondents knowingly or unknowingly responded as rules and regulations were very low and low in priority.

Dropout case is familiar activity of education sector of Jimma zone as per the cash crop area of the land. Most of the students quit their education and involved in other transactions of goods and services. Table 8 clearly shows that about three (2%), eight (5.2%), 23 (15%), 57 (37.3%), and 51 (33.3%) of respondents replied as very low, low, medium, high, and very high respectively concerning information on students' dropouts by grade, sex, and age. With the average mean value of 4.02 which indicates that information on dropout of students were demanded or and supplied highly or very highly. This more indicates that as it is needed in day to day activities of EMIS.

To sum up, the analysis of Table 8 student related data part, the grand mean of this Table is 3.69 which approximately 4. Thus this indicates that information's demanded or/and supplied to or from school and other organs was high. This shows us EMIS demand and supplies were high.

Personnel and teacher related information were also analyzed the Table 8 above shows that about one (0.7%), one (0.7%), 54 (35.3%), 57 (37.3) and about 40 (26.1%) responded as very low, low, medium, high, and very high respectively information on supervisors' report. The average=3.88, and the standard deviation =0.83 indicates that almost the information (report) of supervisors are moderately high. This further indicates that the reports by the supervisors were the inputs for decision making in any EMIS issues.

Information on teachers numbers by subject, qualification, experience, sex, and age has also analyzed the response was about one (10.7%), 35 (22.9%), 48 (31.4%), and 69 (45.1%) were responded as low, medium, high, and very high respectively. On average the analysis shows 4.21 almost high and very high. This and the result analyzed through interview indicate that something surprising. That was even there were schools and WEO that does not have any organized record or information about teachers and their personnel in general. This by itself highly affects the demand/or supply of data/information and will affect even the carrier structure of and promotion of personnel.

Information on teachers' performance or efficiency per semester /quarterly/ yearly was also analyzed. As a result as it were analyzed on Table 8, about two (1.3%), 10 (6.5), 18 (11.8%) 104 (68.0%), and 19 (12.4%) of respondents replied as very low, low, medium, high, and very high respectively. Moreover, the average= 3.84 and the standard deviation =0.773 clearly indicates that almost the respondents agreed on the issue that the information about teachers performance is almost highly demanded. But, the reality obtained through interview indicates that there was even no annual teachers' appraisal (efficiency) document at all. They prepare easily as per the request of individual teacher for career structure (salary increment) or for other competitions.

Schools' class size (standard) and student class ratio were also analyzed. As a result of interviews, FGD, and document analysis on average the class-student ratio was 1:76. This is to say that within one class about 76 students attend teaching learning process. But as it was stated clearly on Oromia regional education bureau annual abstract the standard for secondary school must be 1:40. Again the Table 8 clearly indicates that about 14 (9.2%), 26 (17.0%), 39 (25.5%), and 35 (22.9%)of respondents were replied as very low, low, medium, high, and very high respectively-on average=(3.39). The information shows that the attention given for class – student ratio was moderate (medium). On the other way round, the relationship between schools

and other stakeholders like NGO, community, and parents were very low as it was analyzed on other Tables above (See Table 7). This clearly shows that as students were crowded and highly suffocated. This indeed highly affects during the instruction or teaching learning EMIS in general.

Moreover, the information about teachers-students ratio, and students' book ratio, is also seen seriously. The respondents gave their responses as 1:53 (student-teacher ratio), and 1:1 (student-text book ratio). Student text ratio was almost succeeded that one student can use (have) one book. These support the students to get necessary information on time when they required. This also facilitates good chances for learning, studying and doing exercises and home work as required. Again the analysis on Table 8 (see standard and ratio) indicates that about one (0.7%), 48 (31.4%), 55 (35.9%), and 41 (26.8%) of respondents responded as very low, medium, high , and very high, about 96 (26.7%) of the respondents said student-class ratio, student teacher ratio, and student text ratio are highly or very highly demanded or/and supplied. This further indicates that these ratios are very important and base for teaching learning and quality of EMIS in general.

4.2.3. Extent of Data/Information Utilization

The effectiveness of EMIS is measured in terms of the usage and utilization of data/ information from time to time. The extent of data usage was analyzed by using t-test and standard deviation. The following Table 9 below displays the differences and similarities of responses given by directors and vice directors on the extent of data tool for collection and dissemination of information to/from needy.

Table 9: View of Respondents on Utilization of Data/Information

S/No	Items	Test of respondents among directors and vice directors	Descriptive Statistics			ANOVA Test		t-Test
			Mean	St.dev	St. Error	Levenes' test for Equality of variances		t- test for equality of means
						F	Sig	t
1	Assessment of effective data in improving student learning	Directors (N=15)	2.93	0.20	0.067	1.907	0.174	-1.977
		Vice directors (N=30)	3.13	0.346	0.063			
2	Collection of evidence of progress in leaning from school	Directors (N=15)	3.47	0.516	0.133	0.446	0.508	-0.836
		Vice directors (N=30)	3.60	0.498	0.091			
3	Record each pupil's progress in learning each term	Directors (N=15)	3.13	0.516	0.133	2.665	0.110	0.918
		Vice directors (N=30)	2.83	1.206	0.220			
4	Review each students' achievements in comparison	Directors (N=15)	3.20	0.676	0.175	0.438	0.512	0.360
		Vice directors (N=30)	3.10	0.960	0.175			
5	Compare achievements in particular year group	Directors (N=15)	3.27	0.594	0.153	0.039	0.844	-1.372
		Vice directors (N=30)	3.50	0.509	0.093			
6	Compare pupils' achievement with similar local schools	Directors (N=15)	2.47	0.834	0.215	2.146	0.150	-.652
		Vice directors (N=30)	2.87	0.730	0.133			
7	Compare pupils' achievement with similar nationalities	Directors (N=15)	3.40	0.507	0.131	0.000	1.000	-.262
		Vice directors (N=30)	3.60	0.498	0.091			
8	Each pupil's achievements in comparison with targets set.	Directors (N=15)	2.67	0.724	0.187	2.243	0.141	-1.333
		Vice directors (N=30)	2.93	0.583	0.106			
9	Summative teacher assessment outcomes over time	Directors (N=15)	2.53	0.743	0.192	4.797	0.034	-0.358
		Vice directors (N=30)	2.60	0.498	0.091			

The computed mean, standard deviation, standard error, and, f and t values shows almost as there were no significant difference among the response given by the directors, and vice directors. Specially both respondents agreed or almost agree as they compare pupils' achievement with that of similar schools.

On top of that both respondents almost review each pupils' achievements in comparison with targets set or standards set by regional education bureau. When we compare the dimensions or the extents of usage of data (tools) responded by both directors and vice directors: even though there were no significant difference among the groups; there were a little pick relatively (high signal) where t=1.977, t=1.372, t=1.652, t=1.333. As collected and analyzed above negative t-value cannot have any further interpretation thus the researcher took only the magnitude.

On the other way round, on issues (see Table 9) where t-values t=0.836, t=0.918, t=0.360, and t=0.358 the respondents almost all in all agreed and responded in a similar observation or perspectives

To sum up, the information collected from both groups (directors, and vice directors) were supporting each other-on issues concerning the extent of usage of data or tools. As it was triangulated from these groups, the researcher honestly admitted the consensus of their idea that was converged to reality.

4.2.4. General View of Respondents on Utilization and Usage of Information

On Table 9 above the argument of responses of directors, and vice directors were analyzed by using t-test with significance level f≤ 0.05. Now the following Table (Table 10) shows the detailed analysis of all respondents of this study using one way ANOVA. This analysis was needed to see whether the ideas responded by different groups were converges or diverges.

Table 10: Respondents View on Utilization and Usage of Data/Information

S/No	Items	Descriptive Statistics Measures				One Way ANOVA	
	data input	Mean	St.dev	Sum of squares	Mean square	F-value	Sign
1	Analysis has positive impact on learning outcome	2.93	0.446	2.708	0.387	2.040	0.054
2	Data management tools simplify the process	3.46	0.659	2.161	0.309	0.702	0.671
3	It is difficult to translate the information generated	2.92	0.811	5.487	0.784	1.204	0.304
4	Do not feel the potential for using data	3.05	0.652	1.421	0.203	0.465	0.858
5	The analysis of data does not improve teaching	3.31	0.702	2.746	0.392	0.788	0.599
6	The analysis of data makes performance of school	2.50	0.926	17.481	2.497	3.211	0.003
7	Data analysis has helped to identify areas of teaching	3.20	0.642	8.892	1.270	3.422	0.002
8	Data analysis identify students' under performing	2.66	0.771	6.525	0.932	1.613	0.136
9	Data analysis helped to identify need to be addressed	2.41	0.847	2.751	0.393	0.536	0.806

According to the Table 10 above the mean ranges from 2.41 to 3.46 and with of the grand mean=2.94. These shows generally there were significant difference among different groups. Specifically, when we treat each item individually one by one we will obtain the following detailed analysis.

In their woreda (respective woredas) the way they (respondents) assess the effectiveness of their data tools in improving pupils' learning had significant differences. Since expected or standard f=2.95 and the computed f=2.04, significance level <0.05 and the obtained sig value = 0.054. This clearly shows us there were significant differences. But this result contradicts with that of the value computed and analyzed under Table 9 above that there was no significant difference among directors, and vice directors. But the difference seen or observed as a result of the responses of other respondents or groups.

On other way round; the way they collect evidence of progress in learning from different schools and other sources of information were also analyzed on this Table (Table 10). As can be seen from Table 10 f=0.702 which is less than the standard value= 2.95, the calculated sig=0.671 which is greater than 0.05. This calculated information clearly gives us the input to decide as there were no significant differences among the groups of respondents. Absence of significant difference mean do not leads us to say EMIS was enhanced and facilitated. Even though the respondents agree on their response the way they collect evidence and information from school and other sources were traditional and disappointing.

4.3. Data Input for EMIS

In order to obtain good EMIS, the input that we use in school and other education systems need greater attention. If the input is distorted miss leading/then the output or resulting EMIS will also be highly affected. To see this, the following Table is trying to come with the analyzed information that responds to the current situation of EMIS.

Table 11: Respondents' View on Data Input

S/No	Items	Statistical test		
		Mean	St.dev	Chi-sq
1	Data has positive impact on learning	1.65	0.621	118
2	Data management and school target setting	1.80	0.876	69.876
3	Difficulty of translation of data into school plan	3.73	1.021	1.127
4	Fully potential data analysis in school	2.50	1.107	52.327
5	The analysis does not improve learning	3.95	1.330	61.196
6	Data analysis makes the discussion easier	1.58	0.958	2.172
7	Data analysis identify training need assessment	1.67	1.105	2.113
8	Data analysis helps to identify underperforming students	2.05	0.822	1.968
9	Data analysis helps to identify areas of teaching addressed	1.95	0.768	66.163
10	Teachers have no data management system	3.57	0.887	1.220
11	Data supports continuous assessment	1.62	0.896	1.853
12	Training is needed	1.55	0.980	2.466
13	Data is used in the school at all levels	3.42	1.151	80.562
14	Data analysis tells us nothing	3.49	1.341	32.977

The computed standard deviations for each item revealed that the difference among the respondents is just about 0 to1 standard deviations for all items, implying that the opinion of respondents towards the inputs of EMIS was consistent. In addition to this, one way chi-square was employed to test if there is any gap or discrepancy between the groups of respondents on the input data for the improvement of EMIS development. The computed f-value of Chi-square=17.118 which is greater than the actual standard f-value= 2.97. This clearly shows that there is no significant difference among treated groups that analysis has had a positive impact on

learning outcomes in their woreda. Similarly there was no significant difference on data management tools simplify the process of setting woreda targets.

Generally the computed f-value of the chi-square and its asymptote significance level=0.000 clearly shows as there is no significant difference among the groups.

4.3.1. Adequacy and Quality of Information EMIS.

An increase in demand of users implies an increase in level of data driven decision making. How quality of data information measured is the question of many institutions. Indeed, measuring quality has remained difficult in many production as well as service giving organizations. However, literatures existing around data information quality use content, time lines and the format of presentation as indicators to evaluate quality (Obrien, 1998). This section also tries to investigate EMIS out puts quality in terms of content, form, and timeliness in doing so, the respondents were supplied with three major indicators and nine minor indicators to rate in a likert scale involving very high (5), high (4), medium (3), low (2), and very low (1).

The figures in Table 12 below shows that, the computed means of respondents' response on quality of data /information from zone education office to school level of woredas of Jimma.

Table12: Respondents' Views on the Quality of EMIS Data/Information.

Indicators of quality		Mean score of respondents								ANOVA	
Major	Minor	Directors	Vice directors	School sup	Unit Lead	WEO	WEO CPO	Wor sup	Stat	F value	Sig
Content	Relevance	4	4	3	4	4	4	4	3	1.965	0.064
	Completeness	3	3	3	3	4	4	4	3	1.714	0.110
	Accuracy	3	3	3	3	3	4	3	3	0.555	0.791
Form	Deathliness	3	4	3	3	3	3	3	3	1.470	0.182
	Presentation	3	3	3	3	3	3	3	3	0.500	0.834
	Clarity	3	4	3	3	3	3	3	3	2.680	0.012
Time lines	Frequency	3	3	3	3	3	3	3	3	0.08	0.999
	Currency	3	3	3	3	3	3	3	3	1.139	0.995
	Timeliness	3	3	3	3	3	4	3	3	0.356	0.926

The calculated ANOVA show the quality of indicators of content has no significant difference on relevance and accuracy. But concerning the completeness it shows as there exists a significance difference among respondents. This more shows that the information had a problem since it was not completed. Being incompleteness shows it will highly affects the whole EMIS.

On top of this the mean score of respondents on the content specifically on relevance shows almost 4. The grand mean of relevance =3.75 which show that the input or indicators of EMIS success is highly important. But the grand mean that was observed on accuracy of information as the indicator of success were almost 3. This shows the information demanded and supplied were medium. This shows inaccurate information leads the decision-maker to undesired conclusions.

Forms of information in terms of detainees, presentation and clarity were also analyzed on this Table. As the figures on this Table tells us that value of detainees of data=1.470, sig=0.182 which both values of presentation of information were 0.5, and 0.834-respectively. This shows that there is no significant difference among responses of respondent from all groups. This further indicates that the information collected about detailness and presentation was consistent. In accordance ANOVA calculated value; the grand mean of this two issues were 3. This shows the detailness, and presentation of data/ information were medium. But on the other way round the value for clarity of information=2.680 and its respective sig=0.012. As the figure shows f-value is less than the actual value. This ANOVA shows as there was significant difference among the respondents' responded from different perspectives.

Lastly timelines of data/information as the indicator of EMIS were also analyzed and the results were registered. So, under timelines three minor dimensions were evaluated and the figures displayed as follows. Value for up-to-datedness of information=0.356, and its respective sig=0.926, value for currency of information/data=0.139 and its respective sig=0.995, and value for frequency of information=0.081, and its respective sig=0.999. These three values were less than the standard value=2.95 and the three sig. were also greater than the actual significance interval ≤ 0.05. This clearly indicates that there were no significant difference among the responses replied by different groups. This further shows that the information collected on timelines was consistent.

To sum up, concerning the timelines of information collected shows consistency. But this consistency does not mean that the status of data /information/ as the indicator of success of EMIS were not up-to-date. As the information on this agenda were triangulated through interview shows that there were no data/ information received/ sent/ on time from/to different factors like ICT equipments, means of transfer of data/ information and due to lack of educated manpower on computer and ICT. Artfield, and others (2002) have expressed this problem as "in Ethiopia one

would not normally find computers at education offices below region". No internet services are also there almost throughout woreda.

4.3.2. Information and Computers

As analyzed on Table 14 above the respondents mentioned that as there were lack of educated manpower on computers and ICT. To confirm this information were collected and analyzed whether the computers and other related materials were hindering the effectiveness of the success of EMIS.

Table 13: View of Respondents on the Existence of Computer

Existence of Computer			
Yes		No	
F	%	F	%
119	77.8	34	22.2

As the figure on Table 13 above indicates about 119 (77.8%) replied that there were computers in their school or organization. Even though computers are available still the told to have in problem. One group says there is shortage of commuters and other ICT equipment. The computers available are limited only to directors/WEO officers' office. This made them not to use even the available computer. The other groups responded that even they don't have a single computer and computer related equipments. Even if the computers were available the other groups responded as there was no trained man power in this area.

To sum up, it is possible to say computers and computer related EMIS functions are not as such functional. So, this by itself affects the success of EMIS and decision makers. It is possible to see the functionality of computers inline of the timely, accuracy, detailness, completeness, frequency and other major and minor indicators of information/EMIS. Absences of computers, absences of trained manpower on computer and computer related an issue highly affects EMIS. Computer performs billions of instructions with a second even if the tasks are routine. So, this supports individuals to send and receive data/ information timely.

4.3.3. Purpose of Computers Used in Schools and WEO

Even though the numbers of computers available at school level and WEO were limited, the usage of these computers was also analyzed as follows.

Table 14: View of Respondents on the Purpose of Computer Used

S/No	The purpose of computers used	F	%
1	For writing and storage	70	58.8
2	For internet	12	10
3	Internet, teaching process	14	11.7
4	Storage	13	10.9
5	Internet & storage	10	8.4

As per the Table 14 above about 70 (50.8%) of respondents replied that they were using the computers for writing word processing's like letters, reports, memos, etc. About 12 (10%) of respondents responded that as they have been using for internet connections. What the researcher wants to remind here is that the schools responded about internet were preparatory schools. As far as this study was concerned, not even one school and woreda education office had an internet access at all except preparatory schools. Those preparatory schools had internet not right now where these study was conducted. There was internet access for preparatory schools that related with that of plasma broadcast. But in 2003 E.C since there was no plasma access due to change of students text book as a country wise; there were no any internet access observed in this academic calendar.

The major challenges that were related to computer and EMIS were also shown in this study. The interview made with the respondents revealed that the main problems related to computer and computer technology were: all teachers were not trained on usage of technology, the transmission of plasma were not consistent, connection failed, one computer for about hundred staffs, shortage of skilled manpower, plasma guide and other problems.

4.4. EMIS Materials Available

In addition to the above ICT and computer related analysis the following Table tries to list the supportive material or devices that enhance the management of information were also analyzed.

Table 15: Respondents' View of EMIS Materials

S/N	EMIS materials Available	Status of the material					
		Functional		Non-functional		We don't have	
		F	%	F	%	F	%
1	Computers (desktop)	127	83.0	5	3.3	21	13.7
2	Laptops	0	0	19	12.4	134	87.6
3	Plasma TV	123	80.4	23	15.0	7	4.6
4	Television	85	55.6	8	5.2	60	39.2
5	Internet	2	1.3	49	32.0	102	66.7
6	CDS, Floppy, flash disk	50	32.7	10	6.5	93	60.8
7	Copier Machine	54	35.3	13	8.5	86	56.2
8	Type writer	50	32.7	69	45.1	34	22.2
9	Binding Machine	0	0	3	2.0	150	98.0

As can be observed from Table 15, about 127 (83%) of respondents responded that their desktop computers were functional. But about five (3.3%) of responds responded as their desk top computers were non functional. Meanwhile about 21 (13.7%) of respondents replied that they do not have desktop computers at all. This shows that most of the available computers were functional without the problems of trained man power and lack of technical support.

Concerning laptop computers, the existence and functionally was unexpected. But about 19 (12.4%) of respondents gave response that their laptop computers were non-functional. But about 134 (87.6%) of respondents replied that they do not have laptop at all.

Concerning plasma TV, about 123 (80.4%) of respondents replied that their plasma TV were functional. About 23 (15%) of respondents said that their plasma televisions were mal-functional.

Even there were the respondents that replied as they do not have plasma televisions in their school. This contradicts with the reports generated by MOE that no secondary schools exist without the access of plasma television.

Concerning internet access about two (1.3%) of respondents replied as their internet connection were functional. But about 49 (32%) and about 102 (66.7%) of respondents gave response as their internet was non functional and even they do not have internet access respectively. This seriously affects the existence of EMIS. This is obviously termed as information age but the reality is opposite to what was expected.

4.5. Problems of Information Management

Problems observed were analyzed in different Tables above. On top of that the problems of educational information and decision making and means of dissemination of educational information. So the following Table tries to analyze the education information and decision making strategies.

Table 16: Respondents' View on Educational Information and Decision

no	Indicators of success of EMIS	Mean	St.de	ANOVA	
				F-value	Sign
1	Sound decision making	3.26	1.317	1.378	0.219
2	School planning & begetting	3.23	1.238	1.940	0.067
3	Evaluating the normal functioning of school	3.42	1.049	2.222	0.036
4	Monitoring the outgoing process of the school	3.58	1.098	3.188	0.004
5	For enrollment projection	2.83	1.037	3.075	0.005
6	policy making	3.20	1.502	1.070	0.386
7	Conducting study in the school	2.64	1.030	3.710	0.001
8	For project implementation	2.34	1.165	3.770	0.001
9	For sack of report	3.83	1.018	1.586	0.144

The findings in the above Table 16 with confidence interval ≤ 0.05 shows as there is no significant difference among respondents concerning sound decision. Calculated ANOVA for sound decision making strategy f-value=1.378 which is less than 2.95 and sig=0.219 which is greater than 0.05. This indicates as there were no significance differences among respondents. On top of that mean=3.26 and standard deviation=1.317 which shows the response given was consistent on sound decision making strategy. Again the calculated f-value=1.940 for school planning and budgeting which is less than the actual standard f-value 2.95, but sig=0.067 which is greater than 0.05 which indicates that there were no significant difference among the group of respondents. Similarly the mean=3.23 and the standard deviation=1.238 which clearly shows that the information provided by respondents were consistent.

Concerning the evaluation of the normal functioning of the school; the calculated ANOVA f-value=2.222 which is less than the actual f-value=2.95 and also the collated sig= 0.036 which is less than the confidence interval=0.05. This clearly implies that there were significant differences between the groups of respondents. This further indicates that the idea was diverged or extended among the respondents. This again indicates that the normal functioning and evaluation of school varies from school to school and from woreda to woreda. This explains that each school or

woreda had its own tools and formats for evaluating the normal functioning of the school. This by itself creates a problem on decisions that made at zone level. EMIS analysis of all woreda varies from place to place and this variation by itself is a challenge for zone education offices.

Monitoring the outgoing process of the school was also analyzed on this Table. The calculated ANOVA for monitoring f-value=3.188 which is less than the actual f-value and the calculated sig=0.004 which is less than 0.05. This clearly shows that there is no significant difference among the respondents. It is possible to infer at 95% confidence level that the information provided on monitoring the outgoing process of the school was consistent. In other way round information for enrollment projection were also analyzed and he calculated ANOVA and the mean together with the mean shows the information provided were consistent.

Information on policy makers in line of that of the school and woreda education offices was also analyzed by using ANOVA. Similarly, the result clearly shows the information provided by respondents were consistent. The information provided converges to the same range of ideas. This clearly shows that, the schools and woreda education offices have similar or the same understanding on information on policy makers. Similarly information about conducting study in the school were also analyzed and the result shows that there is no significant difference among respondents. It is possible to infer or conclude that the information about conducting study in the school converges or consistent at confidence level 95%.

Project implementation is also the base that has to be analyzed. So, the calculated ANOVA indicates that there is no significant difference among respondents' group. Similarly, the information collected with no significant difference clearly shows that information was collected for the sake of report only.

Table 17: View of Respondents on Means of Dissemination of Educational Information

no	Means of communication	Existence			
		Yes		NO	
		F	%	F	%
1	Webpage	0	0	153	100
2	Electronically (softcopy)	0	0	153	100
3	Meeting (PTA, staff, and others)	153	100	0	0

The figures on Table above shows that there is no means of communication like webpage, Electronic (soft copy) and the like to dissemination of data. All respondents responded that there is no these means in schools and woreda education offices. But all respondents replied that they have been using meeting to disseminate information with PTA, staff, and other stockholders. This clearly shows one of the defects of EMIS.

4.6. Improve EMIS Capacity and their Challenges

Training is one way of improving the management skill of individual and the performance of the organization in general. Regarding this barriers of information were collected and analyzed according to the following Table.

Table 18: View of Respondents of Improve EMIS Capacity and their Challenges

s/n	Items	Statistical Measures		One Way ANOVA	
	EMIS functions	Mean	St.dev	F	Sign
1	Statistical publication through CD Rom	2.98	1.558	0.426	0.885
2	Communication through internet	2.49	1.829	0.605	0.751
3	Design internet webpage	2.45	1.832	0.672	0.696
4	Our record management is paper based	4.01	1.192	1.337	0.237
5	School record management computerized	3.61	1.514	1.143	0.340
6	Data base design, development, and maintenance	3.05	1.607	0.348	0.930
7	Survey management at school level	2.74	1.454	0.431	0.881
	Improved HR training for capacity building				
1	Training given to the staff on computer application	2.05	1.346	1.290	0.259
2	Training given to administrative staff	2.36	1.244	2.085	0.049
3	Work procedure and task management	2.23	1.238	1.028	0.414
4	Leadership style and quality management	2.73	1.230	1.319	0.249
5	Good governance	3.19	1.297	1.629	0.132
6	Effective and maximum use of it	2.06	1.461	1.167	0.325

As indicated on Table 18 above concerning means of communication like electronic communication were analyzed, statistical publication through CD-ROM were evaluated with f-value=0.426 which is less than the actual value and sig=0.885 which is greater than 0.05. So, this shows that there is no significant difference among respondents. On top of this mean 2.98 and standard deviation= 1.558. This shows that there is a little bit or about one standard deviation. It is possible to conclude with the confidence level 95% that the idea collected converges to certain point/range.

Communication through internet was analyzed and the result clearly shows that almost inexistence in function. Again Table 18 further indicates on this issue that f-value=0.605 which is

less than the actual f-value and sign=0.751 which clearly reveals that again the response collected had no any significant difference. This is again convergent to the idea that totally there is no any internet access. This blocks or serves as the barrier of communication between the school and woreda education offices.

Concerning designed WebPages this issue were analyzed and interpreted and the result was not promising. f-value=0.672 which is less than the actual f=value=2.95 and sig=0.696 which is greater than the residue of confidence level=0.05. So, this shows that there is no significant difference. This further indicates that the idea collected and analyzed were convergent. If this is the case, school record management system were also analyzed and the result indicates with confidence level=95% were paper based record management system. Calculated ANOVA with f-value= 0.431 which is less than 2.95 and sig=0.881 on survey management at school and woreda level. This shows the similarly of ideas collected from respondents in different groups.

Improved human resource (HR) training for capacity building is very important for the success of EMIS and even success of any organization. Information were collected and analyzed with the standard deviation information were collected and analyzed with the Standard deviation = 1.346, mean=2.05 and the calculated ANOVA with f-value=1.29 and sig=0.259. These all clearly shows that there were no significant differences among the respondents of different groups concerning the training given to staff on computer application. As data/information was collected and analyzed through interview, there were no training was given concerning computer application. This clearly indicates and further confirms as there were lack of skilled manpower on computer and ICT.

As the calculated ANOVA indicates most of the time the training was given for administrative staffs. But as it was analyzed through interview the training given were on different management, good governance, and the like but there were no training given on computer applications for these administrative staff. Work procedure and task management at school level, and woreda education office were also treated. The calculated ANOVA with f-value=1.028 which is less than 2.95, and sign=0.414 which is greater than 0.05. This shows that there is no significant difference on information collected from different groups.

Leadership style and quality management together with good governance were also analyzed in Table above. So, the result shows that ANOVA with f-value= 1.310 and sig 0.249, and f-value=1.297 and sig=0.132 for leadership style, and quality management respectively. In both cases the information collected is supporting each other. From this it is possible to conclude with confidence level 95% that the information is convergent. In other way round, effective and maximum usage of it was also analyzed and the result was surprisingly disappointing. There is no effective usage of ICT due to the reasons and factors analyzed in Table above.

4.6.1. Challenges Facing EMIS Development

Even though, we are in information age and most of the activities and tasks are computerized; steal our school systems are suffering from different challenges facing EMIS administrative procedure. Concerning these issue different indicatives like poor coordination, and leadership is one challenging factor.

Table 19: Challenges Facing EMIS Development

s/n	Challenges facing EMIS Administrative/procedure	Statistical Measure		Chi-square test		One Way ANOVA
		Mean	St.dev	Chi-sig	F	sign
1	Poor coordination and leadership	2.78	1.000	124.48	2.129	0.044
2	Lack of system and program monitoring and evaluation	2.88	1.357	13.503	1.849	0.082
3	Poor record keeping	2.93	1.098	57.621	2.518	0.018
4	Lack of organizational readiness	3.33	0.953	89.843	1.041	0.405
	Facilities (materials)					
1	Lack of computer	2.41	1.315	41.477	0.843	0.554
2	Lack of CD Rom, Flash, Hard disk	2.22	1.375	73.307	0.96	0.504
3	Lack of training to use it effectively	1.65	1.029	185.007	0.990	0.441
	Data related challenges					
1	Lack of data integration	2.56	1.302	50.889	0.798	0.591
2	Supplication and overlapping data	2.56	1.351	39.974	3.154	0.004
3	Lack of feedback to data	2.25	0.780	212.71	3.455	0.002
4	In accurate and incomplete information	2.88	1.038	94.68	1.198	0.308
	Finance Related problems					
1	Budget constraint	2.01	1.156	92.781	1.041	0.405
2	Unfair budget allocation	2.26	0.817	113.699	0.899	0.509
3	Unable to allocated during planning	2.45	0.760	75.157	1.277	0.446

For chi-squ=confidence level =99% or sig< 0.01 (Monte Carlo sig). For ANOVA= confidence level= 95% or sig. < 0.05

The calculated ANOVA with f-value =2.129 which is less than 2.95, and sig=0.044 which is less than 0.05. So, it is possible to infer clearly that there is significance difference among response of respondents. This further depicts that the idea diverges to some common points.

Lack of system and program monitoring and evaluation is also another factor that challenged the development of EMIS. The computed ANOVA with f-value =1.849 which is less than 2.95, and sig=0.0.082 which is greater than 0.05. This clearly indicates that the idea converges to a point. In other words, poor record keeping is also another disaster. Concerning this issue the computed ANOVA shows ANOVA with f-value =2.518 which is less than 2.95, and sig=0.18. This clearly shows that respondents' ideas were divergent and it is impossible to judge the case.

Employees of the organization have to get ready for the development of any organization. Lacks of organizational readiness were also organized and the ANOVA as there is no significance difference among the respondents' response. As the data/information were collected through interview indicates that most of teachers and woreda education office workers were not ready to perform tasks. This highly impedes the success and development of EMIS.

Facilities and materials for EMIS were also analyzed and the following detail justified interpreted results are obtained. As it is analyzed and interpreted in other Tables above concerning lack of computers the calculated ANOVA with f-value =0.843 and its respective sig=0.554. This indicates the idea replied converge to common agenda. So, it is possible to infer with ANOVA confidence level 95% and chi-square with confidence level 99% that there is shortage of computers in education system of Jimma Zone.

Duplication and overlapping of data is also analyzed and the result reveals that there is no significant difference among the respondents' response. This clearly shows that the ideas obtained were similar. Mean while lack of feedback to data, and inaccurate and incomplete information are also another dimension that has to be analyzed. The figure on the Table clearly shows that in both cases the ideas obtained were similar.

CHAPTER FIVE

5. Summary, Conclusion and Recommendation

This chapter presents summary of the major investigated findings, the conclusion drawn from the findings, and the recommendations forwarded, that may help to improve the development and success of Education Information System (EIS) of Jimma Zone. The main objective of the study were to investigate the development of EMIS and to assess the efforts made to improve to quality of data to support decision- making, monitoring, and evaluation of the system. to examine the information demanded and supplied. In addition to this the study tries to identify the challenges that impede the development of EMIS. To this end the following six basic questions were formulated in order to achieve the stated objectives and examine the shortcoming encountered in the development of EMIS.

1. What information are supplied to secondary schools by EIS?
2. What information secondary schools needs at large?
3. To what extent information is sufficient, valid, and consistent for decision making?
4. What measures are taken for the implementation of EIS for decision making?
5. What are the problems, and challenges that impedes/hinders/ the development of EMIS?
6. What procedures are in place for collection and dissemination of education information system?

In order to give appropriate conclusion and recommendation for the above six basic questions the specific objectives for target were:

1. To assess the supply and demand of information for the management of secondary schools.
2. To assess the effectiveness of EMIS in line with time, relevance, and reliability.
3. To assess the extent of information utilization to manage secondary schools.
4. To assess efforts made to improve EIS to support decision making process in education system.
5. To identify the major problems and challenges of EMIS.

To address these objectives with respective questions, relevant and related literatures were reviewed. Descriptive survey was employed to assess the development of EMIS and its

challenges. Schools and WEOs were the primary sources of data/information for the study. The secondary sources of data such as meetings' minutes, annual statistics of the school, woreda, and Zone education offices were also reviewed and analyzed. For this study 8 WEOs, 15 secondary and preparatory schools, one ZEO were included and the necessary information were collected and analyzed. Set of questionnaires were used to collect necessary information for EMIS from school directors, vice principals, school supervisors, and unit leaders. With the same taken information were collected from WEO, WEOCPO, woreda supervisors, ZEO, ZEOCPO, and woreda and zone statisticians.

5.1. Summary

In the study, extensive efforts were made to examine the situation from different perspectives. So, as to suggest possible recommendations that may help for the development of EMIS, the data/information obtained from sample respondents were analyzed and interpreted by using percentage, frequency distribution Table, pie chart, mean, grand mean, standard deviation, t-test, Likert scale, chi-square, and one way ANOVA.

5.1.1. Characteristics of Respondents

The respondents of this study were school principals, vice principals, unit leaders, school supervisors, WEOs, WEOCOP, Woreda supervisors, and zone and woreda statisticians. Of this 141 (92.2%) were male, and 12 (7.8%) were female. For this study 162 questionnaires were distributed, but 153 were correctly filled and returned. In other way round nine (5.56%) of questionnaires were lost due to certain factors while distribution and filling of data were 153 (94.44%) succeeded.

5.1.2. Major Findings of the study

Characteristics of the respondents were analyzed in line of their age, sex, educational qualification, job experience, training received. The major findings of the study are summarized as follows.

The sex of respondents with respect of the position vested indicated as there was great gap. What was surprising here is that there was no female director, no female woreda or zone statistician, no female WEO, no female ZEH and ZEOCPO. This shows as it needs further study that it doesn't have any significant effect on this study. To sum up, from the respondents filled the questionnaire 141 (92.2%) were male and 12 (7.8%) were female.

Age wise, as it is indicated in Table 3 there were no vice directors, WEO, WEOCPO, woreda supervisors with age less than 25 years. This indicates that, this position of EMIS needs experience. But one (6.7%) of the directors, one (4.5%) of the school supervisors, one (4.3%) of the unit leaders and one (14.3%) of woreda and zone statisticians were included in the age range less than 25 years. This contradicts with the idea that EMIS needs more experiences. In other way round, 7 (46.7%) of the directors age were 36-45 years and this clearly shows us that as the directors were experienced. Surprisingly, there were no WEO with an experience of 6-10 years and no WEOCPO with an experience of 11-15 years in this study.

Concerning qualification, even though the position needs MA/MSc; almost all are qualified with BA/BSc/BEd. There was no one with qualification TTI. But one (4.3%) of the unit leaders, one (12.5%) of the WEOCPO, and one (2.5%) were under qualified. Those individuals were graduated with diploma that is not required in these positions. In other way round, the reason that made respondents not be satisfied was also be collected and analyzed. Their reasons were because they are not trained in leadership, because of low salary, due to environmental influences, they are not qualified in EDPM, it is difficult activity, it is hard to lead, and lack of facilities were the major reasons.

As analyzed in chapter 4 about 98 (64.1%) of the respondents were took different trainings given by ZEO and regional education bureau. As replied by the respondents One (0.7%) of the respondents replied that the areas training given was on disciplinary problem. 17 (11.1%) were on EDPM, one (0.7%) were on foundation of management and supervision, three (2%) were on management. 11 (7.2%) were on school management. And also 12 (7.8%) took training on teaching methodology. But from 153 respondents 99 (64.7%) were not replied where the training was given rather they simply kept silent. As it was indicated in Table 6 above about 72 (47.1%) responded as they were not satisfied with the training given. But only 39 (25.5%) were satisfied with that of the training given.

Moreover, no one responded as the demand/supply of information between the school and the WEO was very low. The mean of the responses responded were about 3.95 which mean that nearly demand/supply of information highly took place between school and Woreda education offices.

Dropout case is familiar activity of education sector of Jimma zone as per the cash crop area of the land. Most of the students quit their education and involved in other transactions of goods and services.

The result shows that PTA is participating in school and education systems. This indicates that other stakeholders are involved highly in education system. But the schools had their own formats to collect or to send data for stakeholders. But as far as this study was concerned there were no standardized or predefined format that was given for students or woreda education offices to demand or/and supply of information.

Information on teachers' performance or efficiency per semester /quarterly/ yearly was also analyzed. As a result as it were analyzed the average= 3.84 and the standard deviation =0.773 this clearly indicates that almost the respondents agreed on the issue that the information about teachers performance is highly demanded. But, the reality obtained through interview indicates that there was even no annual teachers' appraisal (efficiency) document at all. They prepare easily as per the request of individual teacher for career structure (salary increment) or for other competitions.

The respondents gave their responses as 1:53 (student-teacher ratio), and 1:1 (student-text book ratio). Student text ratio was almost succeeded that one student can use (have) one book.

The calculated information clearly gives us the input to decide as there were no significant differences among the groups of respondents. Absence of significant difference mean do not leads us to say EMIS was enhanced and facilitated. Even though the respondents agree on their response the way they collect evidence and information from school and other sources were traditional and disappointing.

The calculated ANOVA show the quality of indicators of content has no significant difference on relevance and accuracy. But concerning the completeness it shows as there exists a significance difference among respondents. This more shows that the information had a problem since it was not completed. Being incompleteness shows it will highly affects the whole EMIS.

Concerning means of communication like electronic communication like internet, WebPages, statistical publication through CD-ROM are considered as dream issues.

The analyzed information indicates that the normal functioning and evaluation of school varies from school to school and from woreda to woreda.

5.2. Conclusions

EMIS of Jimma zone of education sector were analyzed and interpreted. So, it is the right time to draw the following conclusions.

EMIS with no question supports individual workers and enhances the performance of any organization specifically education sectors. Automated systems support workers in terms of time, cost, clarity, and the like. But the result of the study clearly shows as EMIS was non functional in this zone concerning education system. The factors that impede the development of EMIS. Such factors are trained manpower, material services, willingness, readiness of workers for change and development, etc.

The training given for works of education sector was also seen and most of the respondents were unsatisfied. Even there are individuals that hate their current position. In other way round, most of the respondents were male. This creates a challenge and gender gap and this by itself affects the functionality of EMIS. Record management system and way of decision making strategies are also endanger. Their record management system was totally flat (manual and paper based) system. This is challenging during searching of different information from the existing files. When we say EMIS is functional we have to see everything inline of time, accuracy, clarity, and the like. Concerning these issues the education system of Jimma zone and the like are weak.

Means of communication that they use was meeting to obtain or disseminate information from school staffs, PTAs, and other stakeholders. Imagine how the meeting is boring, and time consuming. There were no internet and other electronic means of communication to receive or send data/information. As different scholars stated information is useful, meaningful, vital, and is power. Even there were the respondents that replied as they do not have plasma televisions in their school. This contradicts with the reports generated by MoE that no secondary schools exist without the access of plasma television.

EMIS materials like computers and the like are insufficient. One computer for one school or no computer for one school principle exists in the area covered. From this ratio it is clear that even there is no computer in Jimma zone education system and schools in particular. With the

absence of computers and other electronics internet and electronic means is unthinkable.Demand and supply of data/information is from school to different stakeholders like WEO, PTA, community, etc. Generally, an activity that has been taking place concerning EMIS in this particular zone was traditional in trend.

5.3. Recommendations

Depending on the major findings and conclusions the following recommendation are forwarded.

This age is obviously an information age in which information and information management is crucial agenda. Individuals have to run inline of time, and technologies. Even the government of Ethiopia announced that 70% of students of higher institutions and preparatory schools have to assigned in the technology faculty whereas about 30% of student remained in social science. This indicates that how much attention is given for technologies. Meanwhile, almost all education sectors from school to higher zone education are not automated. Still the record management system, filing system, even registration of personnel, teachers, and students registration are traditional. EMIS decision support is no available. Even there is no enough materials together with trained manpower in the system studied. So, these issues are crucial and serious events that we cannot put it aside. Authorized individuals, communities, parents, NGOs, together with government have to take serious consideration on this issue.

It is known that EMIS supports teaching and learning activities at school, woreda, and zone education. If this is the case when we say one computer for one school or even there are schools that cannot have computers; the ratio may be 1:100 and more. This is not expected within this age. In other way round we are trying to boost up technology and EMIS. In other way again the school and woreda education offices kept the agenda aside. So, the government and concerned body have to plan vertically and horizontally about EMIS.

Education sector is currently running the six education quality packages. From these packages ICT is one and the base for other five packages. Without the presence of computers, ICT materials and manpower; this package is simply theoretical and meaningless.

Most of the time as it was clarified in the study; different training were given for different staffs and administrators of schools and WEOs' workers. But most of the workers were unsatisfied

with that of the training given. This is due to the absence of need assessment on the area on which training is given. As a result the need and interest of the workers were no clearly addressed. So, to solve such problem SWOT analysis has to be done well.

Even though most of the respondents were degree (BA/BSc/BEd) holders, still there are individuals who are diploma holders and leading even woreda education offices of certain woredas. Assume in the presence of many BA/BSc/BEd holders; under qualified individuals are leading these qualified individuals. This by itself demoralizes and reduces the motivation and readiness of individual workers in school and woreda. So, it is good and important if we follow the principle of scientific management that is "a right person in a right place to do a right thing.

The schools demands information from different stakeholders and supplies to needy as daily activities. This sending and receiving or giving and taking is an activity that performed spontaneously. What is surprising is that each woreda and respective schools are using different formats to collect similar information. These different formats are challenging for analysis at zone level. So, the zone education and woreda together have to prepare standardized formats for data collection. Moreover, policy makers are also intended to plan on EMIS and its implementation.

Reference:

Aiyepeku, W.O. (1978): **The information component in decision-making**: a framework for analysis. *Quarterly Journal of Administration* P. 127-139.

Alexander. (2001): **Triangulation of Quantitative and Qualitative Data in Typological Social Research** Volume 2, No. 1

Anderson, G.(1980): **Fundamentals of Education Research**. London: The Falmer Press

Best, J.W. and Kahn, J.V.(2003):**Research in Education**, 7th ed, New Delhi: Prentice-Hall of India.pvt. Ltd.

Borg, W.P. (1985): **Education Research**. An Introduction, New York: David McKay Company Inc.

Brewer, J.D. and Miller, R.L. (2003): The A-Z of Social Research. London:Sage Publishing.

Clare, C. & Stutele, G.(1995): **Information systems strategy to design**. London: Chapmann & Hall, pp. 18-25.

Carrizo,L.,Sauvageeot C. and Bella N. (2003) :**Information Tools for the preparation and monitoring of education plans.** Paris:UNESCO

Cassidy, T.(2005): **Education Management Information Systems(EMIS) in Latin America and the caribbeans**. Lessons and challenges. Retrieved Oct 15, 2010, from http://www.iadb.org/IDBDOCS.cfm

Cassidy, T.(2006): **Education Management Information Systems(EMIS) in Latin America and the caribbeans**. Lessons and challenges. Retrieved Oct 15, 2010, from http://www.iadb.org/IDBDOCS.cfm.

Chapman, D.W & Mahlck, L.O(Eds)(1993): **From Data to Action**: Linking Data to Action. Paris: UNESCO

Cohen, L. and L. Manon(1994): **Research Methods in Education**. (4th Ed). New York: Rutledge

Currt, A. Flett, P. and Hollings Worth, I. (2006): **Management Information System**: The Business Perspective. London: RutledgeTaylor and Francis Group

Davis,G.B&Olsen, M.H(1985): **Management Information Systems**:Conceptual foundation, structure and development 2nd Edition. New York:McGRAW,.HOL Book Company.

Dennis, A.R. (1996,) **Information exchange and use in small group decision-making**. *Small Group Research, 27*(4) 532-550. Univ. of Georgia, Terry College of Business, Athens, G.A. (From Psychological Abstracts 1997, Jan-Dec, 84 Abstract NO. 30356.

Education Bureau (2007): **Education Statistics Annual Abstract**.2005/06 Addis Ababa

Erwat & Fabunmi (2006): **Information acquisition and managementcapacity as correlates of administrators' decision-making effectiveness in tertiary institutions in Southwestern Nigeria.** Journal of Sociology and Education in Africa, 5(2).

Fernandez, Jorge Max.(2005.) **Information, "Assessement and Decision-Making in the Carribbean Region;** An Analysis." A report prepared for the IADB Carribbean Sub-regional policy dialogue meeting. Washington, D.C.

Global ICT Department. (2002): **Information and Communication Technologies:** A World Bank Group Strategy. *The International Bank for Reconstruction and Development / The World Bank:* Washington, DC 20433.

GOVERNMENT OF ETHIOPIA (2007): **Report on Progress in Implementing the World Fit for Children Plan of Action in Ethiopia**, Addis Ababa.

Hallack, J.(1990): **Planning The Location of Schools: An Instrument of Education Policy**. Paris: UNISCO

http://ezinearticles.com/?How-a-Balanced-Scorecard-For-Education-Evaluation-Should-Be&id=1485354 Retrieved on *Dec 21/2010*

http:// ecommons.txtstate.edu/polsfacp/39/. Retried on Dec 2010

Hua, H. and Heristein, J.(2003): **Education Management Information Systems (EMIS): Integrated Data and Their Implication in Education Management.** Harvard University: New Orleans, LA

Infoshare (n,d). **ICT policies in Education**: Retrieved on 11 October 2010 from http://www.netsoftware.com

Islam, B. (2005): **Creating an Outer Circle in the Digital World:** Participation of Women in the e-Government System. *Economic Commission for Africa.*

Jeilu Oumer(2001): **Decentralization of Education Management**: A case study in Oromia. Addis Ababa Unpublished Master's Thesis

Jimma Zone Education Bureau (2007): **Education Statistics Annual Abstract**. 2009/10 Jimma

Kamar. J. (2005): **Research Methodology**: A step by step guide for beginners. London: Sage Publishing, Inc.

Lassila, K. S. and Borton, J. D. (2004). **Managing Information Technology for Performance: Information Systems Education for Executives**.*Eric database: ED431424.*

Madley, K.(1987): **Management Information System**. Planning and Decision Making. New Delhi: Parentice-Hall

Mengistu Amare(2010): **An Assessment of the Development of EMIS and its Challenges in Addis Ababa City Administration**, Addis Ababa, Unpublished Master's Thesis

Ministry of Education and Culture, Tanzania. (2004). **Education Sector Development Programme: Information and Communication Technology (ICT). Education Management Information System (EMIS) Development** Plan 2004-2007.

MoE(1987): **Education Statistics Annual Abstract**, Addis Ababa.

MoE(1993): **Education Statistics Annual Abstract**, Orion Printing press, Addis Ababa

MoE(1996): **Education Statistics Annual Abstract**, Bole Printing press, Addis Ababa

MoE(1998): **Education Sector Development Program Implementation Manual,** Unpublished Material, MoE.

MoE(2001): **Education Statistics Annual Abstract**, Artistic Printing press, Addis Ababa.

MoE(2003): **Education Statistics Annual Abstract**, Commercial Printing press, Addis Ababa.

MoE(2005): **Education Sector Development Plan(ESDP III).** Addis Ababa.

MoE(2007): **Education Statistics Annual Abstract**, Bole Printing press, Addis Ababa.

MoE(2008): **Education Statistics Annual Abstract**, HY International Printing press, Addis Ababa.

Mekonnen Kajela(2010): **The Practices and Problems of Education Information System (EIS) Management in Oromia**, Master's these, Addis Ababa.

Moses; K. (2001):**EDUCATION MANEGEMENT INFORMATION SYSTEM**:What is it and why do we not have more of it? TechKnowLogia. J accessed from www.techknowlogia.org on December , 2010.

Mulugeta, Abebe(2001): **The Problem of Policy Implementation in the Education Sector.** Cases from selected regions. In Amare Asgedom and others(Eds): Quality of primary Education in Ethiopia. Preceding of National Conference Held in Adama Ras Hotel, November 9-11. Institute of Educationnal Research, Addis Ababa.

O'Brien, J.(2003): **Introduction to Information System**(2nd ed). Boston: Mcgraw, Hill Irwin.

OEB(2005/6): **Education Statistics Annual Abstract**. Finfine: Finfine Printing and publishing S.C.

OEB(2006/7): **Education Statistics Annual Abstract**. Finfine: Finfine printing and publishing S.C.

OEB(2007/8): **The Millennium Education Statistics Annual Abstract**. Finfine: Eth-Cana PLC.

OEB(2009/10): **Education Statistics Annual Abstract**. Finfine: Finfine Printing and publishing S.C.

Oromia National Regional State(2000): **Oromia's Almanac**(Vol.1).Finfinne Reho Printers

Oz, E.(2002): **Management Information System** (3rd ed).New Delhi:Vikas publishing house.

Payne, D.A. (1992): **Measuring and Evaluator Educational Outcomes**.New York: Macmillan Publishing Company.

Ross, K & Mahlck, L.(Eds)(1990): **Planning the Quality of Education the Collection and Use of Data for Informed Decision Making**. UNESCO/IIEP: Pergaman press

Scott, G.M.(1986): **Principles of Management Information Systems**. New York: McGraw-Hill Book Company.

Sudman, S. and Bardburn, N. (1982): **Asking Questions**. A Practical Guide to Questionnaire Design. San Francisco: Jossey-Bass Press

Tegegn N.(2003) :**Education Management Information System:** An overview. Harare: UNESCO

Telem (1990): **The EMIS Structural Framework**. In the international encyclopedia of education, (2nd ed, vol.5, pp. 2828-2831). Great Britain: BPC Whealtons Ltd, Exeter

Telez, (n.d): **Education Management Information Systems (EMIS):**Available Software and Guidelines for Selection.

Teshome Yizengaw(2007): **The Ethiopian Higher Education**. Creating Space for Reform. Addis Ababa: St. Mary's UC Printing Press.

Tricker, Robert I. (1976): **Management Information and Control Systems**. New York: Wiley Plc.

UNESCO (1961): **Manual of Educational Statistics**. Nether Lands: NUESC

UNESCO (2003): **Information Tools for the Preparation and Monitoring of Education Plans, Education Policies and Strategies**. Paris: UNESCO

UNESCO (2006): **Information Systems and Educational Policies**: A framework for Indicators. Addis Ababa: UNESCO

UNESCO (2008): **Education Management Information System:** Retrieved Oct 20,2010 from http://www.unesco.org/iiep

Wilson, A.D (1996): **Managing Information**. Better Worth, Oxford:Heinemann Ltd.

World Education Forum(2000): **Education For All**: Meeting our collective comments. Held in Dakar, Senegal, from 26-28, April 2000. Retrieved on Jan 29, 2011 from http://www.un- documents.net/dakarfa.html

www.tojet.net/articles/526.pdf Retrieved on *Dec 16/2010*

www.eastafricauniversity.net/Files/medicine/bbainner3.html Retrieved on *Dec 16/2010*

www.learningexpert.net/chris/Publication/paper_3.pdf Retrieved on *Nov 12/2010*

Yalew.E.(2006): የምርምር መሠረዊ ምርጫዎች አተገባበር. ባህር ዳር ዩኒቨርሲቲ.

APPENDICES

Appendix A
Addis Ababa University
College of Education and Behavioral Studies
Department of educational Planning and Management
Area of Specialty: Educational Leadership

Questionnaire to be filled by school principals (directors) and vice principals (Vice Directors)

General Direction:

I would like to express my heart-felt appreciation and respect for your precious time and sincere cooperation, in advance, to fill this questionnaire. This questionnaire is designed to collect data/information to investigate the effectiveness of Education Information System (EIS) in the management of secondary schools, typically the status of EMIS (Education Management Information system). The findings could be used for planning, and improving the quality of education system in Jimma zone.

All information will be treated as confidential and no individual or school or Woreda Education Office (WEO) will be identified in any report rather than academic purpose. This requests respondents to follow the questionnaire with honest and sensible manner because your response matters on the findings.

Note that:

1. No need of writing your name.
2. Please put 'X' or '√' mark in the box provided where alternatives are provided when alternative are given.
3. If you have additional or different opinion or for open ended questions, please don't hesitate to given us precise answer.
4. What you respond is taken into account and it may support or affect the conclusions; so as much as possible be patient to fill the questions.
5. Your fast response will contribute to the successful completion of the study.

Part I: Personal information

1. Woreda_____ city/town_____
2. total no of secondary schools in your woreda including preparatory schools _____
3. Position: _____
4. Job experience in year:
   _____ In teaching, _____ In current position
   If others, specify _____ Total experience=_____
5. Sex: Male ☐ Female ☐
6. Age:
   ≤ 25 ☐ 26-35 ☐ 36-45 ☐ ≥ 45 ☐
7. Educational qualification:
   TTI ☐ College Diploma/TVET ☐ BA/BSc/BEd ☐ MA/MSc ☐

   If other, specify _____
8. Area of qualification/specialization:
   Major: _____ Minor: _____
9. Have you took any training related to management?
   Yes ☐ No ☐
10. If your answer to Q.1 is 'yes', the training was:
    Satisfactory ☐ Unsatisfactory ☐
11. Would you list down the areas in which you taken training?
    _____
    _____
12. Are you interested in your current position?
    Yes ☐ No ☐
13. If your answer to Q.4 is 'No', please list the cause made you to hate or dissatisfied in this position.
    _____
    _____
14. If your answer to Q.4 is 'Yes', please reason out why you like the position.
    _____
    _____
15. If an opportunity or chance to learn/upgrade your self is given for you in which field of specialty you need to learn for higher education?
    Management/leadership ☐ Your major area ☐
    If any other, specify _____.

Part II: Types of information demanded and supplied

2.1 Data management tools can be used to guide improvements in pupils' learning. The extent you consider that your woreda use of data management tool(s) improves pupils' learning: Please tick on one of the following:

To great extent =4, to some extent=3, not sure = 2,

To a limited extent =1 not at all=0

Extent of Data tool(usage)	0	1	2	3	4
2.1.1. In your woreda, how do you assess the effectiveness of your data tool(s) in improving pupils learning?					
2.1.2. We collect evidence of progress in learning from the school.					
2.1.3. We record each pupils' progress in learning each term.					
2.1.4. We review each pupil's achievements in comparison with targets set.					
2.1.5. We compare achievements in particular year groups with those of previous cohorts in the schools					
2.1.6. We compare pupils' achievement with that in similar local schools.					
2.1.7. We compare pupils' achievement with that in similar schools nationality					

If any other , please specify _____.

2.2 Please indicate the extent of your agreement with the following statements as: *5= strongly disagree, 4= disagree, 3= neither agree nor disagree, 2=agree, 1=strongly agree.*

2.2. **Data input**	1	2	3	4	5
2.2.1. Analysis has had a positive impact on learning outcomes in my woreda.					
2.2.2. Data management tools simplify the process of setting woreda targets.					
2.2.3. It is difficult to translate the information generated by data analysis into woreda for education plan.					
2.2.4. Do not feel the potential for using data is being fully released in this woreda.					
2.2.5. The analysis of data does not improve teaching and learning.					
2.2.6. The analysis of data makes it easy to discuss the performance of the school with members of staff.					
2.2.7. Data analysis has helped to identify training needs in my woreda.					
2.2.8. Data analysis has helped to identify pupils who are under-performing.					
2.2.9. Data analysis has helped to identify areas of teaching/learning that need to be addressed in this woreda.					
2.2.10. Classroom teachers have no time to be invited to look at the information generated by our data management system.					
2.2.11. The area of data is supporting assessment for learning.					
2.2.12. More training is needed to help staff interpret and use the information generated.					
2.2.12. Data analysis tells us nothing that we don't already know.					

2.3 Types of Educational information needed by the school and other organs. In your perspective to what extent the following list of information are needed at school level and in the system of education?

5=very high, 4= High, 3= Medium, 2= Low, 1= very low

No	Types of Educational information needed	Rating Scale				
2.3.1	**Students related information:**	1	2	3	4	5
	2.3.1.1. Information on learning achievement of children by subject, grade					
	2.3.1.2. Information on student members, performance achievement by subject, grade					
	2.3.1.3. Information on Repeaters by grade, sex, and age.					
	2.3.1.4. standardized students' achievement documents.					
	2.3.1.5. School age population.					
	2.3.1.6. Students' promotion policy.					
	2.3.1.7. Disabled students' manuals					
	2.3.1.8. Ground rules and regulations					
	2.3.1.9. Information on students' dropouts by grade, sex, and age.					
	2.3.1.10. Information on political activities by age, sex, and grade level.					
2.3.2	**Personnel, and teacher related information**	1	2	3	4	5
	2.3.2.1. Information on supervisor's report					
	2.3.2.2. Information on teachers numbers by subject, qualification, experience, sex, and age					
	2.3.2.3. Information on teachers' performance or efficiency per semester/quarterly/yearly.					
2.3.3	**Schools' class size(standard), and ratio**	1	2	3	4	5
	2.3.3.1. Information about class size with respect to standard.					
	2.3.3.2. Information about student class ratio					
	2.3.3.1. Information about teachers student ratio					
	2.3.3.1. Information about student text ratio					

2.4 Data/information users/demanded from school

Please rank (rate) the following by tick :

5=very high, 4= High, 3= Medium, 2= Low, 1= very low

No	Data demanded or supplied by	1	2	3	4	5
2.4.1	Woreda Education Office					
2.4.2	PTA (Parent teachers association)					
2.4.3	Decision Makers					
2.4.4	Policy Makers					
2.4.5	Zone education office					
2.4.6	Regional Education Office					
2.4.7	Parents and community					
2.4.8	NGOs					

Part III: Adequacy and Quality of Information/EMIS

3.1 To what extent does data/information in your woreda satisfy the following quality criteria? Please rate them using the numbers indicated as follows:

5=very high, 4= High, 3= Medium, 2= Low, 1= very low

1. Is there computer in your office?
   Yes ☐ No ☐
2. If the answer of Q.1 above is 'yes' for what purpose you use it?
   Please list here _____
3. If the answer for 'No' 1 above is 'yes' again what are the main problem that is related with effective usage of computer/plasma? Please list the problems in their degree of seriousness.
   1. _____ 3. _____
   2. _____ 4. _____
   If others specify _____
4. Is their plasma manual for teaching/ learning activities per subject?
   A. Yes ☐ B. No ☐ C. for certain subjects ☐
5. If the answer for Q.4 is 'C' for which subject the manual exists in your schools? Please identify in their categories.

Subjects that have a plasma manual	**those cannot have manual**
A._____	A._____
B._____	B._____

3.2 EMIS- Materials available

Lists below are the supportive materials or devices that will enhance the management of information; please indicate the exact status of the material device

No	**Item**	**Current status of the device In your woreda/schools/**		We don't have (not exist)	Remark
		Functional	Non functional		
3.2.1.	Computers (desktop)				
3.2.2	Laptops				
3.2.3.	Plasma TV				
3.2.4.	Television				
3.2.5.	Internet				
3.2.6.	CDs. floppy, flash...				
3.2.7.	Copier Machine				
3.2.8.	Type writer				
3.2.9.	Binding machine				

Part IV: Problems of Information Management

4.1. Educational Information and decision-making

To what extent the following educational information are demanded or used in the woreda? Please rate them by using the numbers indicated below.

5=very high, 4= High, 3= Medium, 2= Low, 1= very low

No	*Purpose for which educational information is demanded/needed*	Rating scale				
		1	2	3	4	5
4.1.1	Sound decision-making					
4.1.2	School planning and budgeting					
4.1.3	Evaluating the normal functioning of school					
4.1.4	Monitoring the ongoing process of the school					
4.1.5	For enrollment Projection					
4.1.6	Policy making					
4.1.7	Conducting study in the school					
4.1.8	For project implementation					
4.1.9	For sack of report to the needy/near by edu.office					

4.2. Dissemination of educational information through:

No	Means of communication	Existence		Comment or remark
		Yes	No	
4.2.1	Web-page			
4.2.2	Electronically (soft copy)			
4.2.3	Meeting (PTA, staff, and others)			

Part VI: Improve EMIS capacity and their challenges

5.1 In your opinion, what strategic should be taken to improve ENIS capacity in at woreda level? Please rate them as:

5= very high, 4= high, 3= Medium, 2= low, 1= very low

No	EMIS Capacity	Rating Scale				
	Electronic Communication	*1*	*2*	*3*	*4*	*5*
5.1.1	5.1.1.1 Statistical publication through CD-ROM					
	5.1.1.2 Communication in internet					
	5.1.1.3 Designing internet web-pages					
	5.1.1.4 our record management paper based					
	5.1.1.5 school record management computerized					
	5.1.1.6 Data base design, development and maintenance					
	5.1.7 Survey management at school level					
	Improved Human Resource (Training given) for capacity building	*1*	*2*	*3*	*4*	*5*
5.1.2	*5.1.2.1* Training given to the staff on computer application					
	5.1.2.2 Training given to administrative staff					
	5.1.2.3 Work procedure and task management					
	5.1.2.4 Leadership style quality management					
	5.1.2.5 Good governance					
	5.1.2.6 Effective and maximum use of IT					

5.2 Challenges Facing EMIS Development

(Problems that impede the development of EMIS)

Listed below are problems related to development of EMIS. Please rate them by using numbers indicated bellow.

1= Very serious problem 3= Medium problem 5= No problem
2= Serious problem 4= Rare case problem

No	Challenges facing EMIS Administrative/ Procedure	1	2	3	4	5
5.2.1	5.2.1.1 Poor coordination and Leadership					
	5.2.1.2 Lack of system and program monitoring and evaluation					
	5.2.1.3 Poor record keeping					
	5.2.1.4 Lack of organizational readiness					
5.2.2	**Facility(material shortage)**	1	2	3	4	5
	5.2.2.1 Lack of computer					
	5.2.2.2 Lack of CD-ROM, Flash, Hard disk...					
	5.2.2.3 Lack of training to use IT effectively					
	5.2.2.4 Lack of computer					
	5.2.2.5 Lack of CD-ROM, Flash, Hard disk...					
5.2.3	**Data related challenges**	1	2	3	4	5
	5.2.3.1 Lack of data integration					
	5.2.3.2 Duplication and overlapping data					
	5.2.3.3 Lack of feedback to data					
	5.2.3.4 Inaccurate and Incomplete information					
5.2.4	**Finance Related problems**	1	2	3	4	5
	5.2.4.1 Budget Constraint					
	5.2.4.2 Unfair budget allocation					
	5.2.4.3 Un able to allocate during planning					

If any, please specify_____

_____

Thank you for taking your time to complete this questioner!

Appendix A
Addis Ababa University
College of Education and Behavioral Studies
Department of educational Planning and Management
Area of Specialty: Educational Leadership

Questionnaire to be filled by school principals (directors) and vice principals (Vice Directors)

General Direction:

I would like to express my heart-felt appreciation and respect for your precious time and sincere cooperation, in advance, to fill this questionnaire. This questionnaire is designed to collect data/information to investigate the effectiveness of Education Information System (EIS) in the management of secondary schools, typically the status of EMIS (Education Management Information system). The findings could be used for planning, and improving the quality of education system in Jimma zone.

All information will be treated as confidential and no individual or school or Woreda Education Office (WEO) will be identified in any report rather than academic purpose. This requests respondents to follow the questionnaire with honest and sensible manner because your response matters on the findings.

Note that:

1. No need of writing your name.
2. Please put 'X' or '√' mark in the box provided where alternatives are provided when alternative are given.
3. If you have additional or different opinion or for open ended questions, please don't hesitate to given us precise answer.
4. What you respond is taken into account and it may support or affect the conclusions; so as much as possible be patient to fill the questions.
5. Your fast response will contribute to the successful completion of the study.

Part I: Personal information

1. Woreda_____ school _____ city/town_____
2. School level: grade 9-10 ☐ grade 9-12 ☐ grade 11-12 ☐
3. Position _____
4. Job experience in year:
   _____ In teaching, _____ In current position

   If others, specify _____ Total experience=_____
5. Sex: Male ☐ Female ☐
6. Age:
   ≤ 25 ☐ 26-35 ☐ 36-45 ☐ ≥ 45 ☐
7. Educational qualification:
   TTI ☐ College Diploma/TVET ☐ BA/BSc/BEd ☐ MA/MSc ☐

   If other, specify _____
8. Area of qualification/specialization:
   Major: _____ Minor: _____
9. Have you took any training related to management?
   Yes ☐ No ☐
10. If your answer to Q.1 is 'yes', the training was:
    Satisfactory ☐ Unsatisfactory ☐
11. Would you list down the areas in which you taken training?
    _____
    _____
12. Are you interested in your current position?
    Yes ☐ No ☐
13. If your answer to Q.4 is 'No', please list the cause made you to hate or dissatisfied in this position.
    _____
    _____
14. If your answer to Q.4 is 'Yes', please reason out why you like the position.
    _____
    _____
15. If an opportunity or chance to learn/upgrade your self is given for you in which field of specialty you need to learn for higher education?
    Management/leadership ☐ Your major area ☐
    If any other, specify _____.

Part II: Types of information Demanded and supplied

2.1 Data management tools can be used to guide improvements in pupils' learning. The extent you consider that your schools use of data management tool(s) improves pupils' learning: Please tick on one of the following:

To great extent =4, to some extent=3, not sure = 2,
To a limited extent =1 not at all=0

Extent of Data tool(usage)	0	1	2	3	4
2.1.1. In your school, how do you assess the effectiveness of your data tool(s) in improving pupils learning?					
2.1.2. We collect evidence of progress in learning from teachers in the school.					
2.1.3. We collect relevant examples of pupils' work to demonstrate progress in learning.					
2.1.4. We review summative teacher assessment outcomes over time.					
2.1.5. We record each pupils' progress in learning each term.					
2.1.6. We review each pupil's achievements in comparison with targets set.					
2.1.7. We compare achievements in particular year groups with those of previous cohorts in the school					
2.1.8. We compare pupils' achievement with that in similar local schools.					
2.1.9. We compare pupils' achievement with that in similar schools nationality					

If any other , please specify _____.

2.2 Please indicate the extent of your agreement with the following statements as: *5= strongly disagree, 4= disagree, 3= neither agree nor disagree, 2=agree, 1=strongly agree.*

2.2. Data input	1	2	3	4	5
2.2.1. Analysis has had a positive impact on learning outcomes in my school.					
2.2.2. Data management tools simplify the process of setting school targets.					
2.2.3. It is difficult to translate the information generated by data analysis into school plan.					
2.2.4. Do not feel the potential for using data is being fully released in this school.					
2.2.5. The analysis of data does not improve teaching and learning.					
2.2.6. The analysis of data makes it easy to discuss the performance of this school with members of staff.					
2.2.7. Data analysis has helped to identify training needs in my school.					
2.2.8. Data analysis has helped to identify pupils who are under-performing.					

2.2.9. Data analysis has helped to identify areas of teaching/learning that need to be addressed in this school.					
2.2.10. Classroom teachers have no time to look at the information generated by our data management system.					
2.2.11. The area of data is supporting assessment for learning.					
2.2.12. More training is needed to help staff interpret and use the information generated.					
2.2.13. Data are used by staff at all levels within this school.					
2.2.14. Data analysis tells us nothing that we don't already know.					

2.3 Types of Educational information needed by the school and other organs. In your perspective to what extent the following list of information are needed at school level and in the system of education?

5=very high, 4= High, 3= Medium, 2= Low, 1= very low

No	Types of Educational information needed	**Rating Scale**				
2.3.1	**Students related information:**	**1**	**2**	**3**	**4**	**5**
	2.3.1.1. Information on learning achievement of children by subject, grade					
	2.3.1.2. Information on student members, performance achievement by subject, grade					
	2.3.1.3. Information on Repeaters by grade, sex, and age.					
	2.3.1.4. standardized students' achievement documents.					
	2.3.1.5. School age population.					
	2.3.1.6. Students' promotion policy.					
	2.3.1.7. Disabled students' manuals					
	2.3.1.8. Ground rules and regulations					
	2.3.1.9. Information on students' dropouts by grade, sex, and age.					
	2.3.1.10. Information on political activities by age, sex, and grade level.					
2.3.2	**Personnel, and teacher related information**	**1**	**2**	**3**	**4**	**5**
	2.3.2.1. Information on supervisor's report					
	2.3.2.2. Information on teachers numbers by subject, qualification, experience, sex, and age					
	2.3.2.3. Information on teachers' performance or efficiency per semester/quarterly/yearly.					
	Teachers' Guide/plasma manuals					

	Schools' class size(standard), and ratio	1	2	3	4	5
2.3.3	2.3.3.1. Information about class size with respect to standard.					
	2.3.3.2. Information about student class ratio					
	2.3.3.1. Information about teachers student ratio					
	2.3.3.1. Information about student text ratio					

2.4 Data/information users/demanded from school

Please rank (rate) the following by tick :

5=very high, 4= High, 3= Medium, 2= Low, 1= very low

No	Data demanded or supplied by	1	2	3	4	5
2.4.1	Woreda Education Office					
2.4.2	PTA (Parent teachers association)					
2.4.3	Decision Makers					
2.4.4	Policy Makers					
2.4.5	Zone education office					
2.4.6	Regional Education Office					
2.4.7	Parents and community					
2.4.8	NGOs					

Part III: Adequacy and Quality of Information/EMIS

3.1 To what extent does data/information in your school satisfy the following quality criteria? Please rate them using the numbers indicated as follows:

5=very high, 4= High, 3= Medium, 2= Low, 1= very low

Indicators of EMIS Quality		Rating Scale				
Major	**Minor**	1	2	3	4	5
Content	Accuracy					
	Relevance					
	Completeness					
	Clarity					

Form	Detail ness					
	Presentation					
Timeliness	Timelines/up to dated/on time					
	Currency					
	Frequency					

1. Is there computer in your school?
   Yes ☐ No ☐
2. If the answer of Q.1 above is 'yes' for what purpose you use it?
   Please list here _____
3. If the answer for 'No' 1 above is 'yes' again what are the main problem that is related with effective usage of computer/plasma? Please list the problems in their degree of seriousness.
   1. _____ 3. _____
   2. _____ 4. _____
   If others specify _____
4. Is their plasma manual for teaching/ learning activities per subject?
   A. Yes ☐ B. No ☐ C. for certain subjects ☐
5. If the answer for Q.4 is 'C' for which subject the manual exists in your school? Please identify in their categories.

Subjects that have a plasma manual	**those cannot have manual**
A._____	A._____
B._____	B._____

3.2 EMIS- Materials available

Lists below are the supportive materials or devices that will enhance the management of information; please indicate the exact status of the material device

No	**Item**	**Current status of the device**		We don't have (not exist)	Remark
		Functional	Non functional		
3.2.1.	Computers (desktop)				
3.2.2.	Laptops				
3.2.3.	Plasma TV				
3.2.4.	Television				

3.2.5.	Internet				
3.2.6.	CDs, floppy, flash...				
3.2.7.	Copier Machine				
3.2.8.	Type writer				
3.2.9.	Binding machine				

Part IV: Problems of Information Management

4.1. Educational Information and decision-making

To what extent the following educational information are demanded or used in the school? Please rate them by using the numbers indicated below.

5=very high, 4= High, 3= Medium, 2= Low, 1= very low

No	***Purpose for which educational information is demanded/needed***	**Rating scale**				
		1	**2**	**3**	**4**	**5**
4.1.1	Sound decision-making					
4.1.2	School planning and budgeting					
4.1.3	Evaluating the normal functioning of school					
4.1.4	Monitoring the ongoing process of the school					
4.1.5	For enrollment Projection					
4.1.6	Policy making					
4.1.7	Conducting study in the school					
4.1.8	For project implementation					
4.1.9	For sack of report to the needy/near by edu.office					

4.2. Dissemination of educational information through:

No	Means of communication	Existence		Comment or remark
		Yes	No	
4.2.1	Web-page			
4.2.2	Electronically (soft copy)			
4.2.3	Meeting (PTA, staff, and others)			

Part VI: Improve EMIS capacity and their challenges

5.1 In your opinion, what strategic should be taken to improve ENIS capacity in at school level? Please rate them as:

5= very high, 4= high, 3= Medium, 2= low, 1= very low

No	**EMIS Capacity**	***Rating Scale***				
	Electronic Communication	***1***	***2***	***3***	***4***	***5***
	5.1.1.1 Statistical publication through CD-ROM					
	5.1.1.2 Communication in internet					

5.1.1	5.1.1.3 Designing internet web-pages					
	5.1.1.4 school record management paper based					
	5.1.1.5 school record management computerized					
	5.1.1.6 Data base design, development and maintenance					
	5.1.7 Survey management at school level					
5.1.2	**Improved Human Resource (Training given) for capacity building**	***1***	***2***	***3***	***4***	***5***
	*5.1.2.*1 Training given to the staff on computer application					
	*5.1.2.*2 Training given to administrative staff					
	*5.1.2.*3 Work procedure and task management					
	*5.1.2.*4 Leadership style quality management					
	*5.1.2.*5 Good governance					
	*5.1.2.*6 Effective and maximum use of IT					

5.2 Challenges Facing EMIS Development

(Problems that impede the development of EMIS)

Listed below are problems related to development of EMIS. Please rate them by using numbers indicated bellow.

1= Very serious problem 3= Medium problem 5= No problem

2= Serious problem 4= Rare case problem

No	Challenges facing EMIS Administrative/ Procedure	1	2	3	4	5
5.2.1	5.2.1.1 Poor coordination and Leadership					
	5.2.1.2 Lack of system and program monitoring and evaluation					
	5.2.1.3 Poor record keeping					
	5.2.1.4 Lack of organizational readiness					
5.2.2	**Facility(material shortage)**	1	2	3	4	5
	5.2.2.1 Lack of computer					
	5.2.2.2 Lack of CD-ROM, Flash, Hard disk...					
	5.2.2.3 Lack of training to use IT effectively					
	5.2.2.4 Lack of computer					
	5.2.2.5 Lack of CD-ROM, Flash, Hard disk...					
5.2.3	**Data related challenges**	1	2	3	4	5
	5.2.3.1 Lack of data integration					
	5.2.3.2 Duplication and overlapping data					
	5.2.3.3 Lack of feedback to data					
	5.2.3.4 Inaccurate and Incomplete information					
5.2.4	**Finance Related problems**	1	2	3	4	5
	5.2.4.1 Budget Constraint					
	5.2.4.2 Unfair budget allocation					
	5.2.4.3 Un able to allocate during planning					

If any, please specify_____

_____

Thank you for taking your time to complete this questioner!

Appendix C
Addis Ababa University
College of Education and Behavioral Studies
Department of educational Planning and Management
Area of Specialty: Educational Leadership

Questionnaire to be filled by School supervisors, and Unit Leaders

General Direction:

I would like to express my heart-felt appreciation and respect for your precious time and sincere cooperation, in advance, to fill this questionnaire. This questionnaire is designed to collect data/information to investigate the effectiveness of Education Information System (EIS) in the management of secondary schools, typically the status of EMIS (Education Management Information system). The findings could be used for planning, and improving the quality of education system in Jimma zone.

All information will be treated as confidential and no individual or school or Woreda Education Office (WEO) will be identified in any report rather than academic purpose. This requests respondents to follow the questionnaire with honest and sensible manner because your response matters on the findings.

Note that:

1. No need of writing your name.
2. Please put 'X' or '√' mark in the box provided where alternatives are provided when alternative are given.
3. If you have additional or different opinion or for open ended questions, please don't hesitate to given us precise answer.
4. What you respond is taken into account and it may support or affect the conclusions; so as much as possible be patient to fill the questions.
5. Your fast response will contribute to the successful completion of the study.

Part I: Personal information

1. Zone_____ city/town **Jimma**
2. total no of secondary schools in your Zone including preparatory schools _____
3. Position: _____
4. Job experience in year:
   _____ In teaching, _____ In current position
   If others, specify _____ Total experience=_____
5. Sex: Male ☐ Female ☐
6. Age:
   ≤ 25 ☐ 26-35 ☐ 36-45 ☐ ≥ 45 ☐
7. Educational qualification:
   TTI ☐ College Diploma/TVET ☐ BA/BSc/BEd ☐ MA/MSc ☐

   If other, specify _____
8. Area of qualification/specialization:
   Major: _____ Minor: _____
9. Have you took any training related to management?
   Yes ☐ No ☐
10. If your answer to Q.1 is 'yes', the training was:
    Satisfactory ☐ Unsatisfactory ☐
11. Would you list down the areas in which you taken training?
    _____
    _____
12. Are you interested in your current position?
    Yes ☐ No ☐
13. If your answer to Q.4 is 'No', please list the cause made you to hate or dissatisfied in this position.
    _____
    _____
14. If your answer to Q.4 is 'Yes', please reason out why you like the position.
    _____
    _____
15. If an opportunity or chance to learn/upgrade your self is given for you in which field of specialty you need to learn for higher education?
    Management/leadership ☐ Your major area ☐
    If any other, specify _____.

Part II: Types of information demanded and supplied

2.1 Data management tools can be used to guide improvements in pupils' learning. The extent you consider that your Zone use of data management tool(s) improves pupils' learning: Please tick on one of the following:

To great extent =4, to some extent=3, not sure = 2,
To a limited extent =1 not at all=0

Extent of Data tool(usage)	0	1	2	3	4
2.1.1. In your Zone, how do you assess the effectiveness of your data tool(s) in improving pupils learning?					
2.1.2. We collect evidence of progress in learning from the school.					
2.1.3. We record each pupils' progress in learning each term.					
2.1.4. We review each pupil's achievements in comparison with targets set.					
2.1.5. We compare achievements in particular year groups with those of previous cohorts in the schools					
2.1.6. We compare pupils' achievement with that in similar local schools.					
2.1.7. We compare pupils' achievement with that in similar schools nationality					

If any other , please specify _____.

2.2 Please indicate the extent of your agreement with the following statements as: *5= strongly disagree, 4= disagree, 3= neither agree nor disagree, 2=agree, 1=strongly agree.*

2.2. **Data input**	1	2	3	4	5
2.2.1. Analysis has had a positive impact on learning outcomes in my Zone.					
2.2.2. Data management tools simplify the process of setting Zone targets.					
2.2.3. It is difficult to translate the information generated by data analysis into Zone for education plan.					
2.2.4. Do not feel the potential for using data is being fully released in this Zone.					
2.2.5. The analysis of data does not improve teaching and learning.					
2.2.6. The analysis of data makes it easy to discuss the performance of the school with members of staff.					
2.2.7. Data analysis has helped to identify training needs in my Zone.					
2.2.8. Data analysis has helped to identify pupils who are under-performing.					
2.2.9. Data analysis has helped to identify areas of teaching/learning that need to be addressed in this Zone.					
2.2.10. Classroom teachers have no time to be invited					

to look at the information generated by our data management system.					
2.2.11. The area of data is supporting assessment for learning.					
2.2.12. More training is needed to help staff interpret and use the information generated.					
2.2.12. Data analysis tells us nothing that we don't already know.					

2.3 Types of Educational information needed by the school and other organs. In your perspective to what extent the following list of information are needed at school level and in the system of education?

5=very high, 4= High, 3= Medium, 2= Low, 1= very low

No	Types of Educational information needed	**Rating Scale**				
2.3.1	**Students related information:**	**1**	**2**	**3**	**4**	**5**
	2.3.1.1. Information on learning achievement of children by subject, grade					
	2.3.1.2. Information on student members, performance achievement by subject, grade					
	2.3.1.3. Information on Repeaters by grade, sex, and age.					
	2.3.1.4. standardized students' achievement documents.					
	2.3.1.5. School age population.					
	2.3.1.6. Students' promotion policy.					
	2.3.1.7. Disabled students' manuals					
	2.3.1.8. Ground rules and regulations					
	2.3.1.9. Information on students' dropouts by grade, sex, and age.					
	2.3.1.10. Information on political activities by age, sex, and grade level.					
2.3.2	**Personnel, and teacher related information**	**1**	**2**	**3**	**4**	**5**
	2.3.2.1. Information on supervisor's report					
	2.3.2.2. Information on teachers numbers by subject, qualification, experience, sex, and age					
	2.3.2.3. Information on teachers' performance or efficiency per semester/quarterly/yearly.					
2.3.3	**Schools' class size(standard), and ratio**	**1**	**2**	**3**	**4**	**5**
	2.3.3.1. Information about class size with respect to standard.					
	2.3.3.2. Information about student class ratio					
	2.3.3.1. Information about teachers student ratio					
	2.3.3.1. Information about student text ratio					

2.4 Data/information users/demanded from school

Please rank (rate) the following by tick :

5=very high, 4= High, 3= Medium, 2= Low, 1= very low

No	Data demanded or supplied by	1	2	3	4	5
2.4.1	Zone Education Office					
2.4.2	PTA (Parent teachers association)					
2.4.3	Decision Makers					
2.4.4	Policy Makers					
2.4.5	Zone education office					
2.4.6	Regional Education Office					
2.4.7	Parents and community					
2.4.8	NGOs					

Part III: Adequacy and Quality of Information/EMIS

3.1 To what extent does data/information in your Zone satisfy the following quality criteria? Please rate them using the numbers indicated as follows:

5=very high, 4= High, 3= Medium, 2= Low, 1= very low

Indicators of EMIS Quality		Rating Scale				
Major	**Minor**	**1**	**2**	**3**	**4**	**5**
Content	Accuracy					
	Relevance					
	Completeness					
Form	Clarity					
	Detail ness					
	Presentation					
	Timelines/up to dated/on time					

Timeliness	Currency					
	Frequency					

1. Is there computer in your office?
   Yes ☐ No ☐
2. If the answer of Q.1 above is 'yes' for what purpose you use it?
   Please list here _____
3. If the answer for 'No' 1 above is 'yes' again what are the main problem that is related with effective usage of computer/plasma? Please list the problems in their degree of seriousness.
   1. _____ 3. _____
   2. _____ 4. _____
   If others specify _____
4. Is their plasma manual for teaching/ learning activities per subject?
   A. Yes ☐ B. No ☐ C. for certain subjects ☐
5. If the answer for Q.4 is 'C' for which subject the manual exists in your schools? Please identify in their categories.

Subjects that have a plasma manual	**those cannot have manual**
A._____	A._____
B._____	B._____

3.2 EMIS- Materials available

Lists below are the supportive materials or devices that will enhance the management of information; please indicate the exact status of the material device

No	**Item**	**Current status of the device In your Zone/schools/**		We don't have (not exist)	Remark
		Functional	Non functional		
3.2.1.	Computers (desktop)				
3.2.2.	Laptops				
3.2.3.	Plasma TV				
3.2.4.	Television				
3.2.5.	Internet				
3.2.6.	CDs, floppy, flash...				
3.2.7.	Copier Machine				

3.2.8.	Type writer				
3.2.9.	Binding machine				

Part IV: Problems of Information Management

4.1. Educational Information and decision-making

To what extent the following educational information are demanded or used in the Zone? Please rate them by using the numbers indicated below.

5=very high, 4= High, 3= Medium, 2= Low, 1= very low

No	***Purpose for which educational information is demanded/needed***	**Rating scale**				
		1	**2**	**3**	**4**	**5**
4.1.1	Sound decision-making					
4.1.2	School planning and budgeting					
4.1.3	Evaluating the normal functioning of school					
4.1.4	Monitoring the ongoing process of the school					
4.1.5	For enrollment Projection					
4.1.6	Policy making					
4.1.7	Conducting study in the school					
4.1.8	For project implementation					
4.1.9	For sack of report to the needy/near by edu.office					

4.2. Dissemination of educational information through:

No	Means of communication	Existence		Comment or remark
		Yes	No	
4.2.1	Web-page			
4.2.2	Electronically (soft copy)			
4.2.3	Meeting (PTA, staff, and others)			

Part VI: Improve EMIS capacity and their challenges

5.1 In your opinion, what strategic should be taken to improve ENIS capacity in at Zone level? Please rate them as:

5= very high, 4= high, 3= Medium, 2= low, 1= very low

No	**EMIS Capacity**	***Rating Scale***				
	Electronic Communication	***1***	***2***	***3***	***4***	***5***
5.1.1	5.1.1.1 Statistical publication through CD-ROM					
	5.1.1.2 Communication in internet					
	5.1.1.3 Designing internet web-pages					
	5.1.1.4 our record management paper based					
	5.1.1.5 school record management computerized					

	5.1.1.6 Data base design, development and maintenance					
	5.1.7 Survey management at school level					
5.1.2	**Improved Human Resource (Training given) for capacity building**	***1***	***2***	***3***	***4***	***5***
	*5.1.2.*1 Training given to the staff on computer application					
	*5.1.2.*2 Training given to administrative staff					
	*5.1.2.*3 Work procedure and task management					
	*5.1.2.*4 Leadership style quality management					
	*5.1.2.*5 Good governance					
	*5.1.2.*6 Effective and maximum use of IT					

5.2 Challenges Facing EMIS Development

(Problems that impede the development of EMIS)

Listed below are problems related to development of EMIS. Please rate them by using numbers indicated bellow.

1= Very serious problem
2= Serious problem
3= Medium problem
4= Rare case problem
5= No problem

No	Challenges facing EMIS Administrative/ Procedure	1	2	3	4	5
5.2.1	5.2.1.1 Poor coordination and Leadership					
	5.2.1.2 Lack of system and program monitoring and evaluation					
	5.2.1.3 Poor record keeping					
	5.2.1.4 Lack of organizational readiness					
5.2.2	**Facility(material shortage)**	1	2	3	4	5
	5.2.2.1 Lack of computer					
	5.2.2.2 Lack of CD-ROM, Flash, Hard disk...					
	5.2.2.3 Lack of training to use IT effectively					
	5.2.2.4 Lack of computer					
	5.2.2.5 Lack of CD-ROM, Flash, Hard disk...					
5.2.3	**Data related challenges**	1	2	3	4	5
	5.2.3.1 Lack of data integration					
	5.2.3.2 Duplication and overlapping data					
	5.2.3.3 Lack of feedback to data					
	5.2.3.4 Inaccurate and Incomplete information					
5.2.4	**Finance Related problems**	1	2	3	4	5
	5.2.4.1 Budget Constraint					
	5.2.4.2 Unfair budget allocation					
	5.2.4.3 Un able to allocate during planning					
	5.2.4.4 Budget Constraint					
	5.2.4.5 Unfair budget allocation					
	7.3.4.6 Un able to allocate during planning					

If any, please specify_____

_____

Thank you for taking your time to complete this questioner!

Appendix F-1

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Department of Educational Planning and Management

RELIABILITY TEST RESULTS OF DIRECTORS AND V/DIRECTORS

```
RELIABILITY
/VARIABLES=Q2.1.1 Q2.1.2 Q2.1.3 Q2.1.4 Q2.1.5 Q2.1.6 Q2.1.7 Q2.1.8 Q2.1.9
Q2.2.1 Q2.2.2 Q2.2.3 Q2.2.4 Q2.2.5 Q2.2.6 Q2.2.7 Q2.2.8 Q2.2.9 Q2.2.10
Q2.2.11 Q2.2.12 Q2.2.13 Q2.2.14 Q2.3.1.1 Q2.3.1.2 Q2.3.1.3 Q2.3.1.4
Q2.3.1.5 Q2.3.1.6 Q2.3.1.7 Q2.3.1.8 Q2.3.1.9 Q2.3.1.10 Q2.3.2.1 Q2.3.2.2
Q2.3.2.3 Q2.3.3.1 Q2.3.3.2 Q2.3.3.3 Q2.3.3.4 Q2.4.1 Q2.4.2 Q2.4.3 Q2.4.4
Q2.4.5 Q2.4.6 Q2.4.7 Q2.4.8 Q2.4.9 Q3.1.1 Q3.1.2 Q3.2.3 Q3.2.4 Q3.2.5
Q3.2.6 Q3.2.7 Q3.2.8 Q3.2.9 Q3.3.1 Q3.3.2 Q3.3.3 Q3.3.4 Q3.3.5 Q3.3.6
Q3.3.7 Q3.3.8 Q3.3.9 Q4.1.1 Q4.1.2 Q4.1.3 Q4.1.4 Q4.1.5 Q4.1.6 Q4.1.7
Q4.1.8 Q4.1.9 Q5.1.1.1 Q5.1.1.2 Q5.1.1.3 Q5.1.1.4 Q5.1.1.5 Q5.1.1.6
Q5.1.1.7 Q5.1.2.1 Q5.1.2.2 Q5.1.2.3 Q5.1.2.4 Q5.1.2.5 Q5.1.2.6 Q5.2.1.1
Q5.2.1.2 Q5.2.1.3 Q5.2.1.4 Q5.2.2.1 Q5.2.2.2 Q5.2.2.3 Q5.2.3.1 Q5.2.3.2
Q5.2.3.3 Q5.2.3.4 Q5.2.4.1 Q5.2.4.2 Q5.2.4.3
/SCALE('ALL VARIABLES') ALL/MODEL=SPLIT.
```

Reliability

```
[DataSet1] F:\Mas.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	9	100.0
	Excluded(a)	0	.0
	Total	9	100.0

a Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Part 1	Value	.932
		N of Items	55(a)
	Part 2	Value	.937
		N of Items	56(b)
	Total N of Items		111
Correlation Between Forms			.870
Spearman-Brown Coefficient	Equal Length		.931
	Unequal Length		.931
Guttman Split-Half Coefficient			.929

a The items are: Q2.1.1, Q2.1.2, Q2.1.3, Q2.1.4, Q2.1.5, Q2.1.6, Q2.1.7, Q2.1.8, Q2.1.9, Q2.2.1, Q2.2.2, Q2.2.3, Q2.2.4, Q2.2.5, Q2.2.6, Q2.2.7, Q2.2.8, Q2.2.9, Q2.2.10, Q2.2.11, Q2.2.12, Q2.2.13, Q2.2.14, Q2.3.1.1, Q2.3.1.2, Q2.3.1.3, Q2.3.1.4, Q2.3.1.5, Q2.3.1.6, Q2.3.1.7, Q2.3.1.8, Q2.3.1.9, Q2.3.1.10, Q2.3.2.1, Q2.3.2.2, Q2.3.2.3, Q2.3.3.1, Q2.3.3.2, Q2.3.3.3, Q2.3.3.4, Q2.4.1, Q2.4.2, Q2.4.3, Q2.4.4, Q2.4.5, Q2.4.6, Q2.4.7, Q2.4.8, Q2.4.9, Q3.1.1, Q3.1.2, Q3.2.3.

b The items are: Q3.2.3, Q3.2.4, Q3.2.5, Q3.2.6, Q3.2.7, Q3.2.8, Q3.2.9, Q3.3.1, Q3.3.2, Q3.3.3, Q3.3.4, Q3.3.5, Q3.3.6, Q3.3.7, Q3.3.8, Q3.3.9, Q4.1.1, Q4.1.2, Q4.1.3, Q4.1.4, Q4.1.5, Q4.1.6, Q4.1.7, Q4.1.8, Q4.1.9, Q5.1.1.1, Q5.1.1.2, Q5.1.1.3, Q5.1.1.4, Q5.1.1.5, Q5.1.1.6, Q5.1.1.7, Q5.1.2.1, Q5.1.2.2, Q5.1.2.3, Q5.1.2.4, Q5.1.2.5, Q5.1.2.6, Q5.2.1.1, Q5.2.1.2, Q5.2.1.3, Q5.2.1.4, Q5.2.2.1, Q5.2.2.2, Q5.2.2.3, Q5.2.3.1, Q5.2.3.2, Q5.2.3.3, Q5.2.3.4, Q5.2.4.1, Q5.2.4.2, Q5.2.4.3.

Appendix F-2

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Department of Educational Planning and Management

RELIABILITY TEST RESULTS OF SCHOOL SUPERVISORS ANS UNIT LEADERS

```
RELIABILITY
  /VARIABLES=Q2.1.1 Q2.1.2 Q2.1.3 Q2.1.4 Q2.1.5 Q2.1.6 Q2.1.7 Q2.1.8 Q2.1.9
  Q2.2.1 Q2.2.2 Q2.2.3 Q2.2.4 Q2.2.5 Q2.2.6 Q2.2.7 Q2.2.8 Q2.2.9 Q2.2.10
  Q2.2.11 Q2.2.12 Q2.2.13 Q2.2.14 Q2.3.1.1 Q2.3.1.2 Q2.3.1.3 Q2.3.1.4
  Q2.3.1.5 Q2.3.1.6 Q2.3.1.7 Q2.3.1.8 Q2.3.1.9 Q2.3.1.10 Q2.3.2.1 Q2.3.2.2
  Q2.3.2.3 Q2.3.3.1 Q2.3.3.2 Q2.3.3.3 Q2.3.3.4 Q2.4.1 Q2.4.2 Q2.4.3 Q2.4.4
  Q2.4.5 Q2.4.6 Q2.4.7 Q2.4.8 Q2.4.9 Q3.1.1 Q3.1.2 Q3.2.3 Q3.2.4 Q3.2.5
  Q3.2.6 Q3.2.7 Q3.2.8 Q3.2.9 Q3.3.1 Q3.3.2 Q3.3.3 Q3.3.4 Q3.3.5 Q3.3.6
  Q3.3.7 Q3.3.8 Q3.3.9 Q4.1.1 Q4.1.2 Q4.1.3 Q4.1.4 Q4.1.5 Q4.1.6 Q4.1.7
  Q4.1.8 Q4.1.9 Q5.1.1.1 Q5.1.1.2 Q5.1.1.3 Q5.1.1.4 Q5.1.1.5 Q5.1.1.6
  Q5.1.1.7 Q5.1.2.1 Q5.1.2.2 Q5.1.2.3 Q5.1.2.4 Q5.1.2.5 Q5.1.2.6 Q5.2.1.1
  Q5.2.1.2 Q5.2.1.3 Q5.2.1.4 Q5.2.2.1 Q5.2.2.2 Q5.2.2.3 Q5.2.3.1 Q5.2.3.2
  Q5.2.3.3 Q5.2.3.4 Q5.2.4.1 Q5.2.4.2 Q5.2.4.3
  /SCALE('ALL VARIABLES') ALL/MODEL=SPLIT.
```

Reliability

```
[DataSet1] F:\Mas.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	15	100.0
	Excluded(a)	0	00
	Total	15	100.0

a Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Part 1	Value	.777
		N of Items	55[a]
	Part 2	Value	.604
		N of Items	56[b]
	Total N of Items		87
Correlation Between Forms			.736
Spearman-Brown Coefficient	Equal Length		.848
	Unequal Length		.848
Guttman Split-Half Coefficient			.848

a The items are: Q2.1.1, Q2.1.2, Q2.1.3, Q2.1.4, Q2.1.5, Q2.1.6, Q2.1.7, Q2.1.8, Q2.1.9, Q2.2.1, Q2.2.2, Q2.2.3, Q2.2.4, Q2.2.5, Q2.2.6, Q2.2.7, Q2.2.8, Q2.2.9, Q2.2.10, Q2.2.11, Q2.2.12, Q2.2.13, Q2.2.14, Q2.3.1.1, Q2.3.1.2, Q2.3.1.3, Q2.3.1.4, Q2.3.1.5, Q2.3.1.6, Q2.3.1.7, Q2.3.1.8, Q2.3.1.9, Q2.3.1.10, Q2.3.2.1, Q2.3.2.2, Q2.3.2.3, Q2.3.3.1, Q2.3.3.2, Q2.3.3.3, Q2.3.3.4, Q2.4.1, Q2.4.2, Q2.4.3, Q2.4.4, Q2.4.5, Q2.4.6, Q2.4.7, Q2.4.8, Q2.4.9, Q3.1.1, Q3.1.2, Q3.2.3.

b The items are: Q3.2.3, Q3.2.4, Q3.2.5, Q3.2.6, Q3.2.7, Q3.2.8, Q3.2.9, Q3.3.1, Q3.3.2, Q3.3.3, Q3.3.4, Q3.3.5, Q3.3.6, Q3.3.7, Q3.3.8, Q3.3.9, Q4.1.1, Q4.1.2, Q4.1.3, Q4.1.4, Q4.1.5, Q4.1.6, Q4.1.7, Q4.1.8, Q4.1.9, Q5.1.1.1, Q5.1.1.2, Q5.1.1.3, Q5.1.1.4, Q5.1.1.5, Q5.1.1.6, Q5.1.1.7, Q5.1.2.1, Q5.1.2.2, Q5.1.2.3, Q5.1.2.4, Q5.1.2.5, Q5.1.2.6, Q5.2.1.1, Q5.2.1.2, Q5.2.1.3, Q5.2.1.4, Q5.2.2.1, Q5.2.2.2, Q5.2.2.3, Q5.2.3.1, Q5.2.3.2, Q5.2.3.3, Q5.2.3.4, Q5.2.4.1, Q5.2.4.2, Q5.2.4.3.

Appendix F-3

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Department of Educational Planning and Management

RELIABILITY TEST WEO WORKERS

```
RELIABILITY
  /VARIABLES=Q2.1.1 Q2.1.2 Q2.1.3 Q2.1.4 Q2.1.5 Q2.1.6 Q2.1.7 Q2.1.8 Q2.1.9
  Q2.2.1 Q2.2.2 Q2.2.3 Q2.2.4 Q2.2.5 Q2.2.6 Q2.2.7 Q2.2.8 Q2.2.9 Q2.2.10
  Q2.2.11 Q2.2.12 Q2.2.13 Q2.2.14 Q2.3.1.1 Q2.3.1.2 Q2.3.1.3 Q2.3.1.4
  Q2.3.1.5 Q2.3.1.6 Q2.3.1.7 Q2.3.1.8 Q2.3.1.9 Q2.3.1.10 Q2.3.2.1 Q2.3.2.2
  Q2.3.2.3 Q2.3.3.1 Q2.3.3.2 Q2.3.3.3 Q2.3.3.4 Q2.4.1 Q2.4.2 Q2.4.3 Q2.4.4
  Q2.4.5 Q2.4.6 Q2.4.7 Q2.4.8 Q2.4.9 Q3.1.1 Q3.1.2 Q3.2.3 Q3.2.4 Q3.2.5
  Q3.2.6 Q3.2.7 Q3.2.8 Q3.2.9 Q3.3.1 Q3.3.2 Q3.3.3 Q3.3.4 Q3.3.5 Q3.3.6
  Q3.3.7 Q3.3.8 Q3.3.9 Q4.1.1 Q4.1.2 Q4.1.3 Q4.1.4 Q4.1.5 Q4.1.6 Q4.1.7
  Q4.1.8 Q4.1.9 Q5.1.1.1 Q5.1.1.2 Q5.1.1.3 Q5.1.1.4 Q5.1.1.5 Q5.1.1.6
  Q5.1.1.7 Q5.1.2.1 Q5.1.2.2 Q5.1.2.3 Q5.1.2.4 Q5.1.2.5 Q5.1.2.6 Q5.2.1.1
  Q5.2.1.2 Q5.2.1.3 Q5.2.1.4 Q5.2.2.1 Q5.2.2.2 Q5.2.2.3 Q5.2.3.1 Q5.2.3.2
  Q5.2.3.3 Q5.2.3.4 Q5.2.4.1 Q5.2.4.2 Q5.2.4.3
  /SCALE('ALL VARIABLES') ALL/MODEL=SPLIT.
```

Reliability

```
[DataSet1] F:\Mas.sav
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	6	100.0
	Excluded(a)	0	00
	Total	6	100.0

a Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Part 1	Value	.889
		N of Items	43[a]
	Part 2	Value	.766
		N of Items	42[b]
	Total N of Items		85
Correlation Between Forms			.751
Spearman-Brown Coefficient	Equal Length		.858
	Unequal Length		.858
Guttman Split-Half Coefficient			.839

a The items are: Q2.1.1, Q2.1.2, Q2.1.3, Q2.1.4, Q2.1.5, Q2.1.6, Q2.1.7, Q2.1.8, Q2.1.9, Q2.2.1, Q2.2.2, Q2.2.3, Q2.2.4, Q2.2.5, Q2.2.6, Q2.2.7, Q2.2.8, Q2.2.9, Q2.2.10, Q2.2.11, Q2.2.12, Q2.2.13, Q2.2.14, Q2.3.1.1, Q2.3.1.2, Q2.3.1.3, Q2.3.1.4, Q2.3.1.5, Q2.3.1.6, Q2.3.1.7, Q2.3.1.8, Q2.3.1.9, Q2.3.1.10, Q2.3.2.1, Q2.3.2.2, Q2.3.2.3, Q2.3.3.1, Q2.3.3.2, Q2.3.3.3, Q2.3.3.4, Q2.4.1, Q2.4.2, Q2.4.3, Q2.4.4, Q2.4.5, Q2.4.6, Q2.4.7, Q2.4.8, Q2.4.9, Q3.1.1, Q3.1.2, Q3.2.3

b The items are: Q3.2.3, Q3.2.4, Q3.2.5, Q3.2.6, Q3.2.7, Q3.2.8, Q3.2.9, Q3.3.1, Q3.3.2, Q3.3.3, Q3.3.4, Q3.3.5, Q3.3.6, Q3.3.7, Q3.3.8, Q3.3.9, Q4.1.1, Q4.1.2, Q4.1.3, Q4.1.4, Q4.1.5, Q4.1.6, Q4.1.7, Q4.1.8, Q4.1.9, Q5.1.1.1, Q5.1.1.2, Q5.1.1.3, Q5.1.1.4, Q5.1.1.5, Q5.1.1.6, Q5.1.1.7, Q5.1.2.1, Q5.1.2.2, Q5.1.2.3, Q5.1.2.4, Q5.1.2.5, Q5.1.2.6, Q5.2.1.1, Q5.2.1.2, Q5.2.1.3, Q5.2.1.4, Q5.2.2.1, Q5.2.2.2, Q5.2.2.3, Q5.2.3.1, Q5.2.3.2, Q5.2.3.3, Q5.2.3.4, Q5.2.4.1, Q5.2.4.2, Q5.2.4.3.

Declaration

I, the undersigned, declare that this is my work and it has not been presented before in any University. Moreover, I declare that all the sources of materials used for this thesis have been duly acknowledged.

Name: Masho Jima

Signature: _____

Date 13/06/2011

This thesis has been submitted for examination with my approval as university advisor.

_____

Signature

Name Dr. Jeilu Oumer

Date:_____