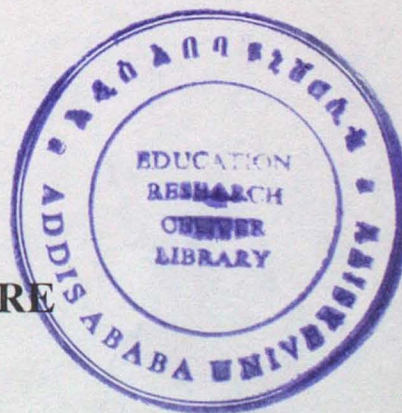


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AND ITS CHALLENGES IN ADDIS ABABA CITY
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**BY:
MENGISTU AMARE**

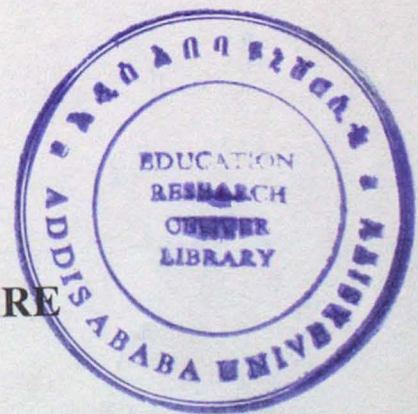


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**A Thesis Submitted to the School of Graduate Studies of Addis
Ababa University in Partial Fulfillment of the Requirements for the
Degree of Masters of Art Degree in Educational Planning and
Management (Educational Policy and Planning)**

June 2009

Acknowledgements

To begin with I would like to express my sincere and heart-felt thanks to my thesis Advisor Dr. Jeilu Oumer who took the pain to read through the paper and for his unreserved professional and technical guidance and his constructive criticism. Without his continuous and unfailing follow up and support, this thesis would not have been successfully completed on time.

My special gratitude also goes to principals, record officers, Head of Addis Ababa Education Bureau and Sub-city Finance and Economics development, EMIS personnel at different levels, and data analysts at kebele levels who have devoted their precious time to share their incalculable ideas through the questionnaires and provide the necessary information for the successful completion of the study. With out their valuable support, this thesis could have been questionable.

I would like to put in words my deepest indebtedness to w/t Kidest Yeshitela who has helped me in typing the manuscript painstakingly and patiently. All those friends and colleagues who come across this thesis through their indisputable and stunning ideas must know that I am dreadfully grateful for their genuine contribution.

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List of Abbreviation and Acronyms

- | | |
|-------------|--|
| 1. AUC- | African Union Commission |
| 2. AEC - | Annual Education Census |
| 3. ANOVA- | Analysis of Variance |
| 4. CSA- | Central Statistics Authority |
| 5. EFA- | Education for All |
| 6. EMIS- | Education Management Information System |
| 7. ESDP- | Education Sector Development Program |
| 8. ETP- | Education and Training Policy |
| 9. FTI- | Fast Track Initiative |
| 10. GDP- | Gross Domestic Product |
| 11. ICT- | Information and Communication Technology |
| 12. IICBA- | UNESCO International Institute for Capacity Building in Africa |
| 12. IT- | Information Technology |
| 13. KEO- | Kebele Education Office |
| 14. MDGs- | Millennium Development Goals |
| 15. MIS- | Management Information System |
| 16. MoE- | Ministry of Education |
| 17. NGO- | Non-Government Organization |
| 18. NESIS- | National Education Statistics Information Systems |
| 19. PRSP- | Poverty Reduction Strategy Programmes |
| 20. SIDA- | Swedish International Development Agency |
| 21. UIS- | UNESCO Institutes of Statistics |
| 22. UNESCO- | United Nations Scientific and Cultural Organization |

Abstract

The main purpose of this study was to assess the development of EMIS and its challenges in Addis Ababa City Administration. The study was conducted at the different levels of the educational hierarchy of the Addis Ababa City Administration Bureau. Descriptive survey method was used to assess the current status of EMIS in the city. 144 respondents were taken from the total population of 240. Samples were taken from Addis Ababa Education Bureau, Finance and Economic Development Offices of the sub-cities and sub-city education department. Schools and kebeles were also included in the study. The school respondents as well as kebele and sub-city EMIS personnel were selected using random sampling method. All heads of Addis Ababa city Administration Education Bureau, sub-cities education department, kebele education office and finance and economic development were taken in the study on the basis of availability sampling technique. To collect the necessary data, questionnaires, interviews and documents were used. The data obtained were analyzed using statistical tools of percentage, mean, t-test, and one-way ANOVA. The result of the study indicates that in its current status, EMIS is providing different kinds of educational information to the users. However, the relevance, quality, and timely of EMIS is not adequate to satisfy the users. The major Problems identified by the study in the development of EMIS include lack of shared vision, lack of commitment, turn-over of personnel, lack of human and material resources, poor record keeping, poor co-ordination and leadership, difficulties in maintain IT, and lack of awareness on the importance of EMIS for planning, decision-making, policy formulation, and projection of future trends. Therefore, one can conclude that information provided for users can be considered as inadequate to be used for accomplishing activities designed to improve EMIS and the teaching-learning process. The recommendations forwarded include establishment of databases, assessing the information demands of users at all levels, developing the EMIS capacity and electronic communication at all levels through continuous training, supplying the necessary materials, equipment, and supporting the development of EMIS.

CHAPTER ONE

1 The Problem and Its Setting

This chapter deals with problems and its approach and consist of background of the study, statement of the problem, objective of the study, significance of the study, delimitation of the study, limitation of the study, definition of operational terms and Organization of the study.

1.1. Background of the Study

An Education Management Information system (EMIS) is a system for the collection, integration, processing, maintenance and dissemination of data and information to support decision making, policy-analysis and formulation, planning, monitoring and management at all levels of an education system. It is a system of people, technology, models, methods, process, procedures, rules and regulations that function together to provide education leaders, decision-makers and managers at all levels with a comprehensive, integrated set of relevant, reliable, unambiguous, and timely data and information to support them in completion of their responsibilities (Cassidy, 2005)

The government of Ethiopia has given high priority to the education sector. The government has developed Education and Training Policy (1994) and Education Sector Strategy as well as Education Sector Development Programme (1997). The current Education and Training Policy (ETP) has devised a strategy to develop an education system with curriculum adaptable to the needs of the country. The Education and Training Policy, its strategy and the Education Sector Development Programme (ESDP) are geared towards re-addressing the problems of access, equity, quality, and relevance with which education in Ethiopia was hooke d (MoE, 2001)

It is obvious that EMIS plays pivotal role in providing possible suggestion to the problems of access, equity, quality, and relevance and in preparing relevant, reliable, and timely information for making rational decisions, enhancing planning and programming, supporting monitoring and evaluation, and helping policy and strategy reviews with in the education system. Thus, the MoE of the Federal Democratic Republic of Ethiopia, with considerable assistance of the regions, collects data, basic variables from all levels of education based on

standard questionnaires designed for pre-primary(KG) , Non-formal adult education, TVET, and Higher education. The data collected are compiled and published annually in the Education statistics Annual Abstract (MoE, 2003).

The main purpose of EMIS is to provide relevant, reliable and up to date data on education as well as to measure the progress made to achieve the targets set in ESDP III. It can also be used as source of information for the various stake holders in the education sector, especially for the purposes of research, planning and policy formulation, for making rational decisions, supporting monitoring and evaluation, and helping policy and strategy reviews within the education system (MoE, 2003).

To achieve the MDGs and EFA goals, we need to have a well-developed EMIS unit which is responsible for collecting, processing, analyzing, disseminating of data to users. Other wise, it is unlikely to achieve UPE and other goals.

The increasing demand for data and information is driven by a number of significant recent trends in countries throughout the region; each of which will challenge EMIS development in different ways: changing goals and objectives, Education for All, Decentralization, civil society, and scarce resources. EFA raises concerns about equality and equity and highlights the need for increasingly disaggregated and integrated data and information with which to monitor and compare development across states, municipalities, communities, schools, and sub-groups of students. Collecting and managing increasing quantities of disaggregated data will require more disciplined and systematic operational procedures and practices than has been the norm in some countries in the past (Cassidy, 2005).

The full understanding of the value of educational statistics by the school community, the clarity of the instrument used to collect data, the relevance, accuracy, and timeliness of the information collected determines the quality of the educational statistics that will be available for the users.

Accordingly, Addis Ababa is one of the regions of the country and now it has city administration education Bureau, ten sub-cities education departments, around 99 kebeles education co-ordination offices. All of these parts should create link or network and get relevant and quality information so as to strengthen the effective and efficient information exchange. Based on this, the study, is therefore, intended to asses the development of EMIS and its challenges in Addis Ababa City Administration.

Addis Ababa is the capital of Ethiopia and the African Union and is often called the "African Capital" due to its historical, diplomatic and political significance for the continent. It is located in the foot hills of the Entoto Mountains and standing 7,726feet (2,355 meters) above sea level, it is the third highest capital in the world. According to 2008/09 census report, it had a population of 3,147,000 consisting of 1,511,000 men and 1,636,000 women and an eight percent annual growth rate. The city is a home to 23.8 percent of all urban dwellers in Ethiopia, and has an estimated density of 5936.2 per square kilometer (<http://www.New World Encyclopedia org/entry/Addis Ababa, 2009>).

Addis Ababa is an important administrative center not only for Ethiopia but also for the whole of Africa. The headquarters of the African union and the United Nations Economic Commission for Africa are both in the city. The United States and the European Union both have two delegations in Addis Ababa, one for bilateral relations with Ethiopia and the other for the African union respectively.

The economic activities in Addis Ababa are diverse in 2007, some 119,197 people in the city were engaged in trade and commerce; 113,977 in manufacturing and industry; 80,391 homemakers of different variety, 71,186 in civil administration; 50,538 in transport and communication, 42,514 in education, health and social services; 32,685 in hotel and catering services; and 16,602 in agriculture, according to Ethiopian official statistics (<http://www.New World Encyclopedia org/entry/Addis Ababa, 2009>)

The main industrial area is in Akaki, in the South-eastern part of the city, where the largest factories are located. Most industries are government-owned, although increasing numbers

are privately owned. Manufacturing includes foot wear, clothing, asbestos and metal products, processed foods, cement, and plywood.

About 82 percent of the populations are Orthodox Christians, 12.7 percent Muslims, 3.9 percent Protestants, 0.8 percent Catholics, while the remaining 0.6 percent is followers of other religions, such as Hindus, Jews, Bah is, and Agnostics (<http://www.New World Encyclopedia org/entry/Addis Ababa,2009>)

With regard to education, there are a number of universities, colleges, and secondary, primary and kindergarten schools, in Addis Ababa. Addis Ababa University is one of the famous universities and was founded in 1950. It was originally named "University College of Addis Ababa", then renamed in 1962 for the former Ethiopian emperor Haile Selassie I. It received its current name in 1975. The city also has numerous private colleges including Admas University College, Saint Mary University College, and Unity University College etc.

Besides, Addis Ababa encompasses different schools. There are 688 primary and 154 secondary schools in Addis. Around 23582 teachers are teaching in these schools. Currently, 504, 531 students are registered and following their education in Addis (ESAA, 2008/9). Therefore, the main focus of the study is to examine the development of EMIS and its challenges in Addis Ababa city administration.

1.2. Statement of the Problem

The long-range vision of EMIS is to establish a demand responsive and self-sustainable education management information system (EMIS) that is: based on integration of decentralized and distributed sub-systems; guided by partnership of stakeholders at both federal and state levels; supported by technically competent bodies (Tegegn, 2003).

Increasing numbers 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.

The purpose of EMIS is to provide a flow of information to system analysts, managers, and policy-makers, on selected indicators of system performance. Since most countries have EMIS the most silent problem is not establishing an EMIS but rather identifying the deficits and their source. One obvious way of identifying deficits is to derive a checklist of performance problems from the literature and then evaluate the existing EMIS against that checklist. The literature suggests that the most serious problems are redundancy, inaccuracy, irrelevant and lack of timeliness (Kemmerer, 1994).

Moreover, establishing effective working relationships between three management layers presents a significant challenge for EMIS development in developing countries. There are issues of capacity and commitment. In developing countries, EMIS plays a minimal role in supporting planning at either the federal, state or local government levels. Besides, for the outsider, it is difficult to understand how the education management information system operates due to the different layers of government involved in the collection and collation of education data. In reforming its EMIS Ethiopia faces similar problems to those experienced by other countries, including a lack of capacity, limited commitment from stakeholders and difficulties associated with the collection of survey data (Trucano, 2006)

There are a range of difficulties countries face in terms of managing the collection, analysis and production of data (i.e., information supply). Besides, most countries appear to place a low value on having good statistical information to support policy (information demand). Therefore, many challenges have been repeatedly observed and are not yet solved in the development of EMIS such as awareness of the society, budget allotment, shortage of personnel, the need for continuous training, over rating the capacity of EMIS, lack of self-initiated learning (Tegegn, 2003:59- 60)

Within the MoE, EMIS is responsible for the promotion and use of information for policy planning and implementation, decision-making, and the monitoring and evaluation of an education system. As we live in the age of information, the success in organizing information systems for the development of education lies in the use of information for monitoring development activities, results in retarded development.

There are three most important critical factors for success. Above all else, political commitment is the most important. Although signing agreements with donors are a sign of commitment to the people (especially to the lowly-paid civil servant who will have to work hard to achieve objectives), such commitment has to be clearly expressed, through, for example, political campaigning and national reform. Giving political priority also means issuing directives to mobilize and authorize financial, material, human and institutional commitment of the operating (Tegegn, 2003)

The second critical factor-good governance-pertaining to the origin and the manner in which direction and authority are exercised to steer the enterprise. In any joint venture, decision-making must involve all the major stakeholders, for each respective authority structure has a vested interest in the outcome, and it is they who must also authorize participation and diversion of staff resources to the common cause. The third critical factor for success is having strong management in place. Here, strong management means the effective co-ordination of staff and resources for task performance.

Generally, EMIS in many developing countries can still be described poor. Data dissemination is slow. Some data are unreliable. The analysis of information and its input to developing better education policies simply signing an agreement and assigning a counterpart to a consultant-driven project does not constitute political commitment.

Many international studies have been made by various researchers on EMIS throughout the world. Cassidy (2005) made a research entitled Education Management Information System (EMIS) Development in Latin America and the Caribbean: Lessons and challenges and lastly, he concluded that the extent and results of EMIS development efforts have varied considerably throughout the region. EMIS development continues to be more difficult and require much more time than anticipated. While increasingly projects tend to give more attention to human resource development, much of this effort is spent on strengthening technical skills to build and maintain and use the EMIS, not on building the skills of data analysts, evaluation specialists, education planners and others to use data more effectively in their work.

Another research was conducted by Trucano (2006) on Education Management Information System: A short case study of Nigeria. The evidence shows that EMIS data has not played a significant role in supporting the planning process at the Federal level. However, with the process of decentralization states are becoming more committed to supporting localized EMIS and some are using data to prepare education plans and develop their budgets. Nevertheless, decentralization of EMIS has only been piloted in a small number of states and time will tell if this approach is sustainable across the country. Besides, due to a lack of resources, early EMIS work was incomplete and not sustained whilst later activity, with private sector implementation, gathered much data but developed little capacity.

In addition to International studies, a number of domestic/local studies have been conducted on EMIS by numerous researchers at different times. To mention some, Tiye (2006) conducted a study on education management information system under decentralization: its practices and problems in Oromia Region and found the following results. As the result of his study indicates, EMIS of the region has tangible outputs of data/information to its users. But EMIS in its decentralized benefit, especially below the region level, is not yet implemented as required. Besides, he indicates, preconditions to decentralize EMIS to lower levels were not observable, training EMIS personnel, developing EMIS for lower EMIS hierarchies, establishing system of accountability were not done by the regional EMIS. In addition to this study, Hailegiorgis (2007) also made a research on the preparation and utilization of EMIS in Addis Ababa City Administration and obtained the following results. In the result of the study he indicates that in its current status, EMIS is providing data/information to its users. However, the quality and the issues of satisfying the information needs of the users are questionable.

Another study was conducted by Ayalew (2009) on the planning and management of EMIS in Addis Ababa City Administration. The result of the study indicates that information was highly utilized for reporting purposes, but it was found that utilization of information for planning, monitoring and evaluation and resource allocation was low. There was also no information communication at all levels. The only dissemination media used were annual abstract and reports.

Generally, there are some resemblances among the three research works/findings. However, the investigation aims to fill the gaps and to look the development of EMIS and its challenges that has not been assessed by the previous researchers.

The student researcher is inspired to conduct this study because he understood that in most cases in Region and sub-city education departments, less emphasis was given to EMIS. Besides, he recognized that the information provided for users at regional and sub-city level is not sufficient, untimely, and poor in quality and not comprehensive. The other problem evident at all levels, starting from the MoE up to the Kebele is that little effort has been made to improve quality data and also there are problems related to the development of EMIS in Addis Ababa city administration.

To sum up, the EMIS functioning in Addis Ababa City Administration and sub-city education departments comprises the above problems. These and other problems motivated the researcher to undertake this study. However, a number of evidences were discussed and conclusions formulated by different researchers about EMIS, this study focuses on the development of EMIS and its challenges at different levels of the education system and to provide possible solutions that may assist to develop an effective and efficient EMIS that can serve for planners, decision-makers, researchers and other stakeholders in Addis Ababa City Administration.

Therefore, based on this the following basic questions were formulated so as to examine the short comings encountered in the development of EMIS.

1. To what extent is EMIS demanded throughout the system of education?
2. What kind of information is produced for users?
3. What are the problems that impede the development of EMIS?
4. What efforts should be made to improve EMIS capacity to support decision-making, monitoring and evaluation of the system?

1.3. Objectives of the Study

The study has the following general and specific objectives.

1.3.1. General Objective

The general objective of the study is to assess the development of EMIS and the emerging challenges.

1.3.2. Specific Objectives

This study has the following specific objectives

1. To assess the extent to which EMIS is demanded throughout the system of education.
2. To examine the types of information produced for users.
3. To identify problems that impede the development of EMIS
4. To assess efforts made to improve EMIS capacity to support decision-making, monitoring and evaluation of the system.

1.4. 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. The study may indicate ways for proper collection, recording and reporting of educational information.
3. The study may assist the city administration education bureau and sub-city education department to establish an effective and efficient EMIS unit.
4. This study may produce possible solutions that enable for EMIS personnel to prepare comprehensive information with regards to its relevance that may satisfy the different stakeholders of the education system.
5. It may help the concerned bodies at different levels of the system to take corrective actions to complete the Annual Education census in timely bases.
6. It may lay the foundation for other researchers to conduct further investigation.

1.5. Delimitations of the Study

The study was delimited only in the development of EMIS and its challenges in selected government primary and secondary schools of Addis Ababa City Administration. Besides, the study is delimited to the following major aspects: the importance of information, EMIS demand, information management life cycle, EMIS planning and management, improving EMIS to support decision making, monitoring and evaluation of the system, kinds of information produced for users and factors that impede the development of EMIS.

Moreover, the study is delimited to three sub cities, 10 kebeles, 14 primary and 8 secondary schools. The rationale behind this is: no study was conducted in the area of EMIS development and its challenges in Addis Ababa City Administration. Besides, the city comprises many educational institutions and stakeholders who are beneficiaries of educational information. Therefore, the study will help the city to take some corrective actions so as to improve the development and challenges of EMIS. Furthermore, the study is delimited to primary education because to achieve UPE by 2015, we need relevant, recent, up to date and accurate information. Besides, secondary education is a base for technical and vocational as well as higher education. Furthermore, the study is delimited to government schools because educational offices in the city use the education information for planning and decision-making. On the other hand, Technical and vocational education was not treated. This is because technical and vocational education was just at its beginning stage, and thus, its size is not as complex as the academic one.

1.6. Limitations of the study

The researcher encountered some problems while conducting this study. In the first place, the researcher encountered problem to access some respondents and difficulty to get them on time. This implies that the responses of all the respondents were not included in the study. This somehow affected the review of related literature and analysis of the study. Therefore, the research was identified as not complete.

1.7. Definition of Operational Terms

Data – Consists of facts and figures that are relatively meaningless to the user.

Data base- is an organized collection of related sets of data, the total set of information that we have in our domain.

EMIS – is part of an education system whose objective is to collect, store, analyze and disseminate data or information to be used in various decision making processes.

Information – is processed data or meaningful data that is important.

MIS- is an integrated, user-machine system for providing information to support operations, management, and decision-making functions in an organization.

System – a set of interrelated elements designed or structured to achieve explicit or implicit objective.

Sub-city: - an intermediate administrative level between region and kebeles

1.8. Organization of the Study

The study comprises five chapters. The first chapter presents the problem and its Settings. The second chapter focuses on review of the related literature. The third chapter treats the research design and methodology and the fourth chapter presents presentation, analysis and interpretation of the findings. The final chapter contains summary, conclusions and recommendations of the study. Bibliography and appendices are also included at the end.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

This chapter deals with the review of related literature which comprises information system, MIS and EMIS; EMIS and its components, the life cycle of information system, EMIS in developing countries, success factors of EMIS and challenges that impede the development of EMIS and its challenges as well as the development and current status of EMIS in Ethiopia.

2.1. Information System, MIS and EMIS

The terms “data” and “information” are often used interchangeably, but the distinction lies in the fact that data items are the raw material processed to provide information. Information has value within a specific decision-making context; it also has value within the context of future decisions and actions (Davis and Olson, 1985). Besides, as described by Kroenke and Dolan (1988) the word information comes from the Latin word *informare*, which means “to build form” or “to give structure”. To summarize, data are facts and figures that are relatively meaning less to the user while information is processed data, or meaningful data.

Generally, different authors define data/information from different angles. There are some resemblances in defining data/information among authors. Above all, information is an important and expensive asset that assists planners, decision-makers and managers so as to make sound decisions and to perform their managerial functions properly.

As cited by Sadagopan (2003) information systems play a crucial role in the management of any contemporary enterprise. It can be defined technically as a set of interrelated components that collect, process, store and distribute information to support decision-making, control, coordination, and analyze problem in an organization (Gezahgn, 2005). Besides, Szymanski et al (1988) define information system as a computer-based business system that provides the data-processing capabilities and information about various aspects of its operations. On top of this, as Carrizo, Sauvageot and Bella, (2003), further described an information system as the basis of management, planning and evaluation of an education system. Establishing an information system is a complex procedure. Managers realize that

the organization's information management needs change overtime and suitable steps of the process may have to be taken in future (Dudeja, 2000).

Generally speaking, information system plays a significant role in collecting, processing, storing, and distributing information to assist decision-making, policy formulation, managing modern organizations as well as providing accurate, relevant and timely information to the users. It is also, the basis of planning, management and evaluation of the education system.

As Davis and Olson (1985) cited, there is no consensus on the definition of the term 'management information system'. Some writers prefer alternative terminology such as "information processing system", "information and decision system", "organizational information system", or simply "information system" to prefer to an integrated computer-based information processing system which supports the operations, management, and decision-making functions of an organization.

In addition to this, a management information system is composed of data, software, hardware, information and people. Each is part of a total concept of integrated resources that can be used by an organization to reach its goals and objectives (Szymanski et al, 1988).

According to Spencer (1981) the objective of an MIS is to provide a means for the information of an organization to be integrated and dynamically updated so that it can be used for planning, decision-making and control purposes. Besides, as described by Teshome (2007) the introduction of IT and MIS in most activities is critical to bring modernity and cost effectiveness.

To sum up, MIS is defined almost in a similar way by many authors as an integrated computer-based information processing system that helps managers in their daily managerial activities like planning, decision-making and so on. Therefore, the role of MIS is vital in supporting managers by providing relevant, reliable and timely data information to achieve the organizational goals. Further more, many management information systems are in wide spread use by the managers at operational, middle and senior level

There is no universally accepted definition of EMIS in popular use throughout the region. The acronym, EMIS, means different things to different people (Cassidy, 2005). Educational management information systems (EMIS) are designed to collect and analyze data on the educational system to improve planning, resource allocation, monitoring, policy formation and decision-making (UNESCO, 2006).

As Tegegn (2003) further cited EMIS is a concept imported from the business world. It is not purely statistics-based, nor does it replace the use of statistics. It requires all sorts of data, including statistics, which need to be credible, verifiable, authoritative, and professionally certified by an authority whose, independent, professional integrity is accepted by all.

Generally, it is the undeniable fact that, EMIS is a key to planners, decision-makers, internal and external stakeholders in providing relevant; reliable accurate, timely and up-to-date information to the education system. Although various people and organization understand it differently, it plays pivotal role in collecting and analyzing data on education system to improve quality education, resource allocation, planning, decision making. Therefore, due emphasis should be given to strengthen EMIS; especially top decision-makers should know the importance of EMIS at all levels of the MoE and allocating the required budget for the successful accomplishment of it.

2.2 EMIS components and Managerial functions

2.2.1 Diagnosis and policy documents

Diagnosis is a thorough study of the level of development of the education system and the way it operates in order to identify gaps or imbalances. Proper diagnosis helps to make proposals for the location of new institutions, for the repair of facilities or the allocation of teachers, and the reorganization of existing institutions (Girmay, 1999). So, diagnosis assists EMIS in assessing the general situation of the education system.

The diagnosis of the system enables to examine the various stages of the information system. Besides, in diagnosis the local education system, the planner will have to deal with the following matters: Coverage of the education system, internal efficiency of the education

In education systems, only strong institutional demand for, and capacity of, policy research and analysis can bring about the effective functions of educational monitoring and evaluation and management information systems, and only when these management capacities are well established can the quality of education in a large system be improved (Hua and Herstein, 2003).

To sum up, policy guides us by giving the general direction to where we want to go. So, we have to create policy governing access to integrate data. This eliminates any bottle necks in the flow of information and enabling information users to easily gain access to required information.

2.2.2 Organizing Information and Utilization of Educational Information

To be used efficiently, information must be systematically organized and inventoried. The principal tool for documenting and structuring the organization's information resources is the data dictionary (Kahn, 1985). The data dictionary stores information about information that is essential to its management as a business resource: what data are available, where the data attributes, who owns or is responsible for the data, how the data are used, and who/what function is allowed to update/change the data, relationships to other piece of data and Security and privacy limitation.

The production of educational data and information is a critical corner-stone on which its information-based decision-making framework is built(Hua & Herstien, 2003).Like wise, a priority in many initiatives to improve the quality and efficiency of education in the third world is the increased use of information in policy formulation and planning (Chapman and Mahlck, 1993).

Further, an effective EMIS needs to address not only what information is necessary for decisions, but also who will use it, in what manner, and how that process is to be supported (Moses, 2001).

As Chapman and Mahlck (1993:6) described information can be used to improve educational quality in four principal ways by: (I) providing data that are used directly to secure or

allocate resources; (ii) constraining 'bad' decisions; (iii) detecting inefficient resource use; and (iv) Supporting mechanisms that offset the impact of resource. Besides, it can be used to detect inefficient resource use, particularly as it can be used to clarify the relationship between alternative inputs and subsequent student performance.

Carrizo, Sauvageot and Bella (2003) identified three levels of data users- Macro, intermediate and micro-as follows. Top level officials, policy-makers, decision- makers, planners, central EMIS staff, and parliament members etc. are data users at macro level. Regional and Sub-city council elects, and Cabinet members, Regional and sub-city education bureau and departments, as well as administrative bodies' etc. are information users at an intermediate level. At micro level, kebele cabinets, Principals, Kebele councils, and administrative bodies, Kebele Education and Training Board, PTA, etc are information users

In short, educational information is used by different users for different purposes at various levels of the education system. For instance, at macro level, the information required will deal more with aggregates used for setting the objectives, whereas at intermediate level, it, there fore, requires more specific data to detect eventual malfunctions, at micro level, more detailed information is needed.

Generally, information should be well organized in a systematic way for planners in order to use it properly. Otherwise, it is difficult to handle the unorganized information. Therefore, information should be arranged in an organized manner for proper utilization of it to different stakeholders.

2.2.3 Research and Planning

Research is broadly understood here to be systematic inquiry aimed at improving data quality and information use. (Chapman & Mahlck, 19933). As Tegegn (2003) further described, the basic statistics we collect regularly every year do not provide all of the information needed for decision-making and planning purposes. Additional information needs to be collected through pilot studies and research undertaking.

Besides, one rational premise that we must always keep in mind is that research and analysis significantly contribute to the quality of information produced. Better information leads to better decisions (Hua and Herstein, 2003). Moreover, the need to gather data, to undertake sector research and thematic studies, to assess and evaluate the efficiency of current programmes, to explore the future in order to facilitate a wider debate on these issues is more than ever a determining factor in guiding decision-making and elaborating education policies (Carrizo, Sauvagest and Bella, 2003).

Similarly, EMIS, by virtue of the facilities and skills available, has the responsibilities of assisting other experts and analysts in research data processing and of training experts in the software skills required for data analysis and research. Engagement in research is one of the methods used for strengthening EMIS and learning more about not only the work process in EMIS but also of policy anchored information services (Tegegn, 2003)

Generally, research can play a pivotal role in improving data quality and information use. Besides, research can help us in providing additional information needed for planning and decision-making. Furthermore, research contributes to the strengthening of EMIS services.

Planning, on the other hand, is important for every activity we undertake. Without proper planning we cannot engage ourselves efficiently in plan implementation, or achieve the high performance level desired in all EMIS activities. Knowing what has to be planned is equally important as scheduling the activities themselves. To achieve the desired goals EMIS must: develop an EMIS strategic plan for the year, ensure successful implementation, and achieve high performance that is sustainable overtime (Tegegn, 2003).

Cassidy (1998:6) further stated that planning and managing the flow of information throughout the organization can minimize labor, data redundancy, and inconsistency, in addition to increasing the quality and accuracy of the information. On top of this, the preparation of an educational plan is an exercise, which requires not only specific skills, but also the availability of reliable and relevant information, which reflects the exact situation of education in the country. In this way, EMIS can feed reliable data to different simulation

models allowing reflection on objectives defined for the medium and long-term (Carrizo, Sauvageot and Bella, 2003).

Further, Friedmann and Hudson's (1974) view planning as an activity which links knowledge with action and occurs at the juncture of information and authority. According to Chapman and Mahlck (1993) policy-makers and planners, in some instances, require highly disaggregated data, such as school or classroom level data, in order to determine the correlates of a specific problem (e.g., high teacher turnover rates; low student achievement).

In summary, planning is one of the managerial functions that involve every level and each department of the organization in the process. Planners need relevant, reliable and up-to-date data/information that reflects the overall education system. Therefore, planning and EMIS are inseparable. They are highly interrelated. EMIS feeds reliable information of the different levels to planners and other stake holders

2.2.4 Management and Administration

Management is an art of coordinating the knowledge and skills of people involved in EMIS activities in order to accomplish planned objectives and visions. To do this, we consider all our activities, the procedures involved, the professionals carrying them out, and the relationships with in and with other stakeholders (Tegegn, 2003).

As Teshome (2007) described the effectiveness of any organization depends largely on the effectiveness of its management and the governance arrangements. Besides, the management functions of EMIS include collecting, storing, integrating, processing, organizing, outputting, and marketing educational data and statistics in a timely and reliable fashion (Hua and Horstein, 2003).

If it is true that the necessity to collect, process, analyze and present data in the right manner is more than ever important in guiding decisions and in helping the elaboration of education policies, it also remains true that the first aim of an education management information system is, as its name indicates, to help manage and administer the education system by

basing itself on modern management tools. The latter helps it to generate multiple routine data and operational information, (Carrizo, Sauvageot and Bella, 2003).

In addition to this, EMIS demands explicit management rather than implicit administration. Management can be defined as the process of organizing human and material resources to complete a desired task; administration is the application of rules to ensure the efficient achievement of agreed management policy. Management is, therefore, a creative, dynamic process whereas administration is a mechanistic and conservative process (Chapman and Mahlck, 1993).

As Tegegn (2003:11) described the challenge for EMIS management is to attract dedicated professionals and workers who have the vision to improve the current situation of low demand for information and launch themselves into a continuous learning environment, and who are willing to do away with 'control and command' management system. This management style works to the advantage of the team members within the EMIS unit, the MOE, and will greatly contribute to the overall development of country wide EMIS systems.

To conclude, management and administration are important components of EMIS that play an important role in coordinating the knowledge and skills of people involved in EMIS. On top of this, they support EMIS functions such as collecting, storing, integrating, processing, organizing educational information and statistics. On the other hand, both management and administration are not one and the same; management is related to the process of organizing human and material resources to complete the desired task while administration, on the other hand, is the application of rules to ensure the efficient achievement of agreed management policy.

2.2.5 Monitoring and Evaluation

Systems of monitoring and evaluation exist to assess what works and what does not work, and to what extent it works or not. Monitoring and evaluation activities at Ministries of Education usually consist of a good set of well-developed indicators routinely produced by a small group of well-trained educational analysts (Hua and Herstein, 2003).

As further stated by MoE (1998:4) the overall purpose of these activities is to assess whether the implementation of the programmes proceeds according to the plan and leads to the desired outcomes. This is generally done by comparing the actual achievements to the objectives, and the learning and quantitative targets set in ESDP.

Monitoring is an important component part of our work. It is part and parcel of EMIS activities when establishing what has been planned and implemented, and what remaining to be done (Tegegn, 2003). Besides, rational decision-making, so important in the management and planning of education, also plays a part with in the context of monitoring and evaluation of education policies (Carrizo, Sauvegest and Bella, 2003).

As Tegegn(2003) indicated monitoring allows us to review our original objectives so that we can check that we are on the right track. Besides, it is important to note that monitoring is the collection of information in a systematic way, carried out in the hope of learning: What has been done, in what way? What problems have been encountered during implementation and how we have tackled them?, What lessons or 'best practice' can be learned for future implementation, with the goal of improving the functions of EMIS in today's changing environment?

Moreover, the objectives set in 1990 during The Jomtien conference aimed to rate of adults from 15 years and above by 2000. Have they been attained? The information produced by EMIS should make it possible to judge. An efficient information system is indispensable in evaluating the progress and impact of these policies (Carrizo, Sauvageot and Bella, 2003).

Evaluation, on the other hand, is basic for every activity we undertake. EMIS activities are no exception. Evaluation can be done internally in the form of self-evaluation, or externally or by professionals from the user community (Tegegn, 2003). He further indicated that evaluation is part of the annual plan. It has an instrument data collection and a time frame or deadline for review. We look into EMIS activities one by one, from data collection to feedback review, including the management and administration style, the progress made, and the successes and failures.

The core purpose of evaluation can be summarized as follows: to improve the overall performance of EMIS functions, to explore valuable lessons and better manage the work for which we are accountable (Tegegn, 2003).

Generally, monitoring demands a regular and systematic gathering and analysis of information on the implementation of EMIS activities. To conduct monitoring, information concerning management and administrative style used, the resources allocated, the delivery of services is equally important. Besides, monitoring involves the provision of continuous feedback on the progress of program implementation. On the other hand, evaluation is conducted at the end of a certain program. It is used to look at all the activities, starting from data collection to feedback gathering in certain interval time.

2.2.6 Finance and Manpower Requirements/Structure

According to Adam (1997) the EMIS financial data include information on budgets, cash balances, expenditures, receipts, schedule of indebtedness and miscellaneous financial reports for higher level management and others such as building profile information.

On top of this, rational allocation of budget to education at both regional and woreda levels entails the need for availability of reliable, up-to-date information on the education plans and their management... It means that the institutionalization, strengthening and sustainability of the EMIS are one of the indispensable pre conditions in the country's education decentralization reform and the attainment of the Millennium Development Goal with respect to education.

According to, Hua and Herstein (2003), EMIS activities are frequently funded initially by donor organizations. This initial investment of capital and capacity building must be met with sustained levels of input.

To summarize, Finance is one of the biggest resources in any organization. So, Finance plays a significant role to perform the overall activities of EMIS and to train EMIS staff.

According to Tegegn (2003) the man power requirement for EMIS depends mainly on the amount of work involved in completing a specific task. An EMIS unit in a smaller country will have less of man power and expertise compared to a large country. Nonetheless, as the sample structure shows, there are important qualifications that are required. No single structure will fit all countries: as with every unit of the MoE, EMIS needs a leader, under the management of EMIS we also need computer professionals- both hard ware and soft ware professionals, including computer programmers and skilled application package users, also required are statisticians for data analysis and the compilation of reports, also required is the information support system and data entry clerks are needed.

2.2.7 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 a continuous 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 a changing 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 used 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 how to interpret and use quantitative data, they tend to ignore them (Chapman and Mahlck, 1993).

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, distribution, 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 relatively permanent change in an 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.

2.2.8 EMIS in a Decentralized System

According to Derebssa (1998) decentralization is designed to enhance responsibilities to the felt needs of people with a view to creating closer affinity to the client being served. It promotes accountability, manageability and division of labor. Key elements for effective decentralization include trained manpower, appropriate administrative structure, communication mechanism, sharing and delegating responsibilities and basic facilities (infrastructure and equipment).

As further mentioned by Chapman and Mahlck (1993) decentralization of the administrative structure has been widely suggested as a means of improving educational practice. Advocates argue that management decision made closer to the level of the school can be more responsive to differences in local contexts and needs.

In the context of EMIS management, decentralization is defined as the share of authority, responsibility, accountability of data collection, processing, analysis, publication, distribution, reporting and dissemination of information to lower levels of administrative units (Tegegn, 2003). Besides, As Chapman and Mahlck, (1993) described, decentralization appears to evolve through three stages: (1) the preservation of greater detail in individual and school characteristics in national data collections (2) greater local participation in data analysis; and (3) decentralization of authority over selected types of educational decisions

As Carrizo, Sauvageot and Bella (2003) further described a strongly decentralized country will need significant processing, research, information dissemination at the regional level; but a centralized country will ask for data entry at the regional level and then make relevant

information available to regional actors. The important thing is to respect the objectives indicated above: coherence, unity and transparency. One of the major justification for decentralization of data use is to narrow the diversity within the groups for whom educational decisions and plans must be made (Chapman and Mahlck, 1993).

Generally, in a decentralized system, the work of EMIS will attract more attention and the quality of data collected will improve. Besides, provinces and woredas will provide better services for information users as well as reduce the burden of central EMIS. Moreover, central EMIS will have time to coordinate their tasks and to provide the necessary support for the different levels below.

2.3 Information Management life cycle

This section consists of data collection, data processing, data analysis, reporting, publication, dissemination and feed back.

2.3.1 Data collection and Processing

Most often, data is collected by means of questionnaires. These are prepared in a 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 schools, condition of school facilities, number of grades offered, numbers of students by sex and age, numbers of repeaters, number of teachers by sex and qualification.

As cited by Carrizo, sauvageot 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 qualitative 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 the data, it is unthinkable to obtain precise results by applying sophisticated methods of analysis. A prerequisite to obtain quality data is a good design of the data collection instrument. This includes a good questionnaire design & a good sampling design.

It is obvious that the 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, unaggregated, 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). As Trucano (2006) described core EMIS data collected through a school census are collected at provincial level whereas data analysis and dissemination of information is performed at central level.

On the other hand, information processing is a major societal activity. A significant part of an individual's working and personal time is spent recording, searching for and absorbing information. Computers have become an essential part of organizational information processing because of the power of the technology and the volume of data to be processed (Davis and Olson, 1985). According to Carrizo, Sauvageot and Bella (2003), the rapidity of information processing & their availability at different services will depend on the quality and the rationality of the computerization.

Once you have collected the school data, you need to plan how to organize its many different types so that it is usable 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 schools are affected by the following factors: staff numbers and skills, administrative organization, working procedures and task management, materials, facilities and logistical support and financial support for operation.

As described by UNESCO (2006:5), the following techniques will be used to collect necessary information such as school census, statistical surveys, sampling survey, administrative and managerial documents, management data bases and external information.

As Carrizo, Sauvageot, and Bella (2003:36-37) stated the quality, reliability, and indeed the usefulness of data collected depend on the attention given to these principles, which are not mutually incompatible but can be competitive, the data collected should be on clear definitions devoid of all ambiguities, the data should be complete in the sense that they should be based on complete list of the public and private education establishments within or outside the authority of the national education ministry and approved or not by the letter, the data should be exact, sufficiently detailed, timely, relevant from the perspective of users, accessible, meaning published in a form which renders them largely comprehensible and not only in heavy year books as it often happens, with little research and analysis.

2.3.2 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, 2003:28). Moreover, Wikipedia, the free Encyclopedia (2007, on line), further described that data processing is 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 incoherencies appear, it is indispensable to proceed to verifications to complete those already carried out at the time of the return of the data (Carrizo, Sauvageot and Bella, 2003:58).

Further more; 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, 2003:28). As he further described, it is always advisable to prepare a short report of the out come for top decision-makers, who may not have the time to read a long report. There fore, the production of the following summary out puts are envisaged from an EMIS unit of the MoE: annual Statistical abstract and quick reference

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 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 in their back ground report.

2.3.3 Publication, Dissemination, and Feed-back

With out publishing your findings, the effort you have put in to collecting, processing, analyzing the data is lost. You may well have printed some reports when asked by higher decision-makers, planners, researchers, and other users (Tegegn, 2003:30). The publication of the information should be carried- out as possible in order to provide the services for which EMIS has been set up. The first documents must be transmitted to policy and decision-makers and other pertinent users with out delay to show them the system's efficiency and the benefits they can expect from it (Carrizo, Sauvageot, and Bella, 2003:106).

The dissemination-communication takes different forms according to the people they are addressed to and their needs. At 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 match larger circle of users in the education system (Carrizo, Sauvageot and Bella, 2003:59)

According to Hallac (1990:260-261) 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, indicators' reports to users, distribution of pamphlets and posters to users, reports and briefing provided to planners and decision-makers at different levels of administration – provinces, districts, and school (Tegegn, 2003:31).

As Tegegn(2003:32-33) 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 correcting. 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 over all educational development.

To sum-up, publication, dissemination and Feed-back are key components of EMIS and they are highly inter-linked. Internally and externally information will have to be disseminated to planners, decision-makers, researchers, government and non-government organizations and the community as a whole. Besides, feed-back is essential to correct problems and will contribute to produce timely and accurate information for an over all development of EMIS.

2.4 EMIS Success Factors

Tegegn (2003) identified three important factors for 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 set standards for information, set timing, define the level of possible accuracy, reports should be the result of daily activities not special purpose efforts, define formats early, 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, 2001:11).

On the other hand, Hua and Herstein (2003:5-7) identified the three key measures of EMIS success: timely and reliable production of Data and Information; data Integration and Data Sharing among Departments, effective use of Data and Information for Educational policy Decisions.

2.4.1. Timely and Reliable Production of Data and Information

According to Hua and Herstein(2003:5) 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 over all educational planning and budgeting cycle; the needs of educational services, such as the logistics unit and other units of school supplies; the needs of educational monitoring and evaluation, and policy research and guidance in a timely fashion and the needs of international collaboration and communication.

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

Besides, the reliable production of data suggests that EMIS data, once produced, 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 timeliness 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, analysts) lose faith in EMIS's ability or credibility, they often discourage support for maintaining, strengthening, and upgrading the EMIS system.

2.4.2. Data Integrating and Data Sharing among Departments

According to Hua and Herstein (2003:6) 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 variously scattered places within the same system. Data integration is a must occur before an educational policy analysts or planner can conduct a high-level and high-quality policy analysis or planning exercise.

It is common to see multiple units within a ministry of education collect and manage large data bases and a ministry of education collect and manage large data bases and not share them with each other. These various sets of data are collected to describe certain elements of the system.

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.

2.4.3. Effective Use of Data and Information for Policy Decisions

One of the most critical factors that contribute to the success of the 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, strengthened, 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.

EMIS activities can often be misconstrued as information technology (IT) activities. It should be noted that IT efforts represent the technical elements of a large information management capacity. Its development will not automatically bring about healthy data flow, data sharing, information production, or information use for policy decisions. EMIS development should concentrate on data and information use and institutional behavior change for modern management. Even without IT, there should be a system or culture of data and information use for management. An IT development should be designed to provide a technical enhancement to facilitate the capacity of data and information production and use (Hua and Herstein, 2003:7).

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 to Government responsibilities whereas Hua and Herstein classified it by relating with information/data production and use. So, various stakeholders can use these success factors based on their interest and the situation.

2.5 The Practices of EMIS in Developing Countries

According to Ellison (2004:23), various developing countries established EMIS of their own at central and regional levels. They collect Educational data from schools at different times by different offices. For instance, in Botswana, for a long time, education data were collected by the statistics office. They are currently in the process of recruiting personnel for the EMIS unit in the Ministry of Education. Botswana has also adopted a decentralized EMIS system. The key challenges being experienced are inadequate training and support, and lack of resources.

In Nigeria, EMIS was launched in 2004. In 2005, a school census form for the pre-primary, Primary and secondary was used to collect information. The form covers basic school information; school characteristics; pupil information; facilities; class information; staff information and teaching and learning. Data collection is conducted in February of each year and statistical reports are produced by August.

Besides, in Tanzania, there are five ministries that are responsible for education. In the Ministry of Education, EMIS unit is with in planning and policy department. Information is collected in March every year and publication is produced in June. Over the year, a number of improvements have been made on the EMIS system. Adopted a decentralized EMIS system but there is limited capacity at the district level. Tanzania is being experienced key challenges like inadequate trained staff, no feedback mechanism from the national level to lower levels of the system and lack of public awareness on available data.

To conclude, in each country education data are collected in different ways and time. In Nigeria, data are collected in February and produced by August; whereas in Tanzania, information is collected in March every year and publication is produced in June. With regard to challenges being experienced, Tanzania for example, is being experienced key challenges like inadequate trained staff, no feedback mechanism from the national level to lower levels of the system and lack of public awareness on available data. While in Botswana the key challenges being experienced are inadequate training and support, lack of resources to connect all schools to the network and resistance by some schools to use school administration record system.

2.6 Challenges of EMIS Development

Hua and Herstein (2003:19-21) described challenges that impede the development of EMIS as Lack of a culture of communication and information exchange, lack of shared vision for EMIS, lack of organizational readiness, and a set of institutional issue.

2.6.1 Importance of a Culture of Communication and Information Exchange

Communication with in Ministries of Education is often uncoordinated or nonexistent. Disjointed, semi-autonomous units operating independently of one another with no centralized management results in a lack of internal communication within the Ministry, and permits the individuals or units to control data and information. This influences the overall institutional culture of the Ministry and often results in poor external communication as well.

2.6.2 Lack of Shared Vision for EMIS

Resistance to adopting a culture of information use can often be attributed to lack of a shared vision for EMIS development. A shared vision is one that is developed from individuals' visions for EMIS- what it should be, how it should function, what goals it seeks, how it should be able to improve the education system for the common good. Without a shared vision, units and individuals within the Ministry are less likely to feel ownership of EMIS, are less likely to be proactive in the advancement of EMIS, and are more likely to contribute less-than-best levels of efforts and intention.

2.6.3 Lack of Organizational Readiness

Organizational structures influence the environment in which EMIS develops. Organizations with unclear lines of accountability, with redundant or nonexistent responsibility assignments, and with poor coordination hinder EMIS development.

2.6.4 Common Institutional Issues

There seem to be some institutional "headaches" that are quite prevalent in the Ministries of education. Although many require changes in social and economic conditions, government structural and social attitudes, some remain as challenges for the top management of the Ministry. These headaches include: Low salary (lower than other social sector profession); High turn-over rate (higher than other sectors' average; Low motivation in Education sector; "Brain-drain" within the Ministry and the country (well trained staff Leave); Lack of data integration and quantitative analysis skills; Lack of data and information sharing; Lack of system and program monitoring and evaluation; Lack of policy research and analysis; Lack of optimal ways to manage resources allocation; Too many uncertainties (lack of visions, goals, targets, ways of achieving them; Major decisions are made but staff can not explain why they are made; and Lack of guidance for dealing with educational dilemmas.

According to Tegegn (2003:59), challenges of EMIS are lack of Awareness, Budget allotment, Self-initiated learning, Personnel shortage, over rating the Capacity of EMIS, and the Need for Continuous training. Furthermore, Hare (2007:7) described challenges on implementation of EMIS such as, user ownership, lack of resources, inadequate or no training and support, management attitude, requirements that change too often, poorly developed and implemented system, lack of depth in local IT industry and bureaucracy.

Furthermore, the issues affecting EMIS development can broadly be separated into 'Information demand' and 'information supply' issues. The supply issues are more direct and tend to be clearly defined. According to Ellison (2004:3) short comings of information supply are described as hard to secure the staff needed, the large number of data providers and the difficulties in communicating with many of them, Poor record-keeping, Forms often try to collect too much information, Low response rates from private institutions the private school sector is often significant; but response roles are generally very low, difficulty in maintaining IT hard ware and software, and difficulties in trying to meet national and sub-national information needs, Lack of reliable population estimates to use with EMIS data.

On the other hand, Demand factors are some what more elusive, but appear to be even more important than production problems in constraining EMIS development. Some of the problems of information demand are: Not every one believes in evidence-based policy-making: decisions may be taken according to various influences and pressures without drawing on reliable information. Further more, Statistical information is not valued at all as a useful input to developing and implementing policy. Moreover, statistical information is not the only form of evidence that may feed into the policy process, and some education administrators' favors others including feed-back from consultative processes. If it is valued, but not enough to establish EMISs.

To conclude, information demand and information supply are the two indispensable components of EMIS. Both are inseparable. The development of healthy information based decision-making culture is highly relying on the decision-makers demand for data and information. This is because different stake holders need accurate, relevant, and timely data and information. Besides, information supply is also significant for providing the necessary information for the stake holders/ information users. But sometimes, it is difficult to obtain effective, well-trained, and experienced staff to provide data and information. Another problem is lack of reliable population estimates to use with EMIS data.

Totally speaking the development of EMIS encountered many challenges from data collection to Feedback stages. However, there are distinctions among different authors in

explaining challenges that impede the development of EMIS. Some of challenges encountered are lack of adequate budget, lack of training, shortage of personnel, Poor coordination and leadership, Lack of clearly defined responsibilities for staff, and other institutional problems. On the other hand, there are issues related to demand and supply that affecting EMIS development

2.7 Development of EMIS in Ethiopia and Its Current Status

The **Central Statistical Agency (CSA; Amh.: የማዕከላዊ ስታቲስቲክስ ኤጀንሲ)** is an agency of the government of Ethiopia designated to provide all surveys and censuses for that country used to monitor economic and social growth, as well as to act as an official training center in that field. It is part of the Ethiopian Ministry of Finance and Economic Development.

While the practice of keeping statistical information in Ethiopia has been traced back as far as the sixteenth century, the need for systematic statistical information that could be used for economic management was recognized as a priority in 1957. In 1960 compiling statistical information became a regular government activity as a result of the Addis Ababa conference of the African Statisticians from UNECA member countries in 1960.

At first the collection of statistics was the responsibility of the Ministry of Commerce, Industry and Tourism, and then in 1963, this activity became the function of the CSO, which was an autonomous unit under the Ministry of Planning and Development. In 1972 the CSO was reorganized in Proclamation 303/1972, and was responsible for the Planning Commission. The CSO was once again restructured in 9 March 1989, when it was renamed as the CSA and was directly responsible to the Council of Ministers. It was once again placed under a Ministry, the Ministry of Economic Development and Cooperation on October 1996, and transferred to its present position in September 2001, under the Ministry of Finance and Economic Development ([http://en.wikipedia.org/wiki/Central_Statistical_Agency_\(Ethiopia\)](http://en.wikipedia.org/wiki/Central_Statistical_Agency_(Ethiopia)) ,2006).

The Statistical Abstract published since 1963, is intended to present a summary of statistical information on the social and Economic conditions of the country. The statistical Abstract

being one of the principal statistical publications of the country, is expected to serve as a convenient statistical references as well as a guide to other statistical publications (CSA, 1984). The organizational structure of the Ministry of Education developed in 1957 indicates the Research and Statistics Bureau as its component, being accountable to the vice Minister (MoE, 1978:172) One of the most important publications that were involved in compiling statistics on the status and trends of the various sectors in the country was prepared by the Central Statistics Authority.

The Ministry of Education has recognized that adequate and reliable information is vital for the efficient planning and management of the education system. Along this line MoE has taken various steps to strengthen its capability to develop the man power and data processing methods. Computerization program at the MoE dates back to 1982 and encompasses several mutually supporting projects, initiated formerly by the policy committee of the MoE and coordinated by the Planning and External Relations Services. The EMIS was developed in Ethiopia in the early 90s with the support from NESIS and SIDA (Ellison, 2004:1). NESIS is currently developing its statistical Information system (SIS) for potential implementation in Anglophone countries.

Even though the available documents do not state exactly when do not state exactly when the first statistical abstract of EMIS was published, from the history of the establishment of the Planning and Programming Department of the MoE and information obtained from the personnel working in the EMIS unit, it can be deduced that the first and formal Education Statistics Annual Abstract prepared by EMIS was probably published in 1985E.C (1992/93).

The purpose of the preliminary statistical report of 1993 was to provide basic statistical information of the education in Ethiopia, from kindergarten to senior secondary schools. It is presumed that the abstract will give the users an overview of the current status of the education system (MoE, 1993:1)

Similarly, the first Annual Education Statistics of the Addis Ababa Region was published in 1994. It was prepared by EMIS unit in the ministry of education. This is substantiated by

MoE (1996:1) which states that this statistical data on education for the 1987E.c (1994/95) academic year. It was prepared in the center in addition to the national education book let that contains educational data on the country as a whole. The objective of this effort is to lay the ground for regional education bureau to regularly publish their own annual statistical abstract that can be used for a regional planning and other similar activities. The book let contains statistical tables only and we hope the regional bureaus will improve the subsequent publications by including charts, important educational indicators and other analytical works. Thus, the Educational Statistics Annual Abstract prepared by the EMIS unit of the department of planning and programming of the Addis Ababa Education Bureau, similar to the unit in MoE, was probably begun to be published in 1997.

Ethiopia has a decentralized EMIS system with Federal responsibility for planning, Policy, development of standard questionnaires and preparing annual statistics. The EMIS center of the MoE collects demands from users of educational statistics. Our consumers include government offices, NGO, large number of student, national and international organizations, private firms, researchers and general public. The first part is dedicated for trend statistics for the last five years. Statistics on public, schools and teachers are included in these five years data. Summary of basic indicators are included in this introduction for a brief overview of all users of education statistics (MoE, 1998:1). Central EMIS is expected to provide special assistance to EMIS personnel at provinces, districts, and schools. Being the major source of educational information, schools need more input regarding training, the improvement of the records management system, and awareness of the use of such information for planning and decision-making purposes (Tegegn, 2003:2).

The regional level is responsible for data entry. They are planning to decentralize computerized data entry to all regions using the wide area network. There is an ICT programme to connect all regions. In the education system, there is a local area network system which needs to be expanded to the 21 higher education institutions. There are a number of institutions in Ethiopia with the capacity for EMIS training. With the assistance of UIS, it has undertaken an EMIS assessment which helped to identify weaknesses and gaps. Key challenges being experienced include computerization of data and information in all regions; lack of human resource in programming(WWW.africa-union.org,2007).

The Education statistics Annual Abstract contains both descriptive and analytical summaries of population, enrolment, teacher profiles, sections, and schools, facilities, learning materials; grade 10 examination results and budgets. The data are further disaggregated by level of education, sex, region, and geographic location in order to allow the user to see regional, Urban/rural and Gender disparity (MoE, 2008).

Currently, in the new structure of the MoE, which is implemented as of 2005, there is an EMIS unit under the ESDP planning and policy analysis Department. This department is directly accountable to the Minister of state. One of its major functions is to collect educational statistics useful to planning and administrative purposes.

CHAPTER THREE

3. RESEARCH METHODOLOGY

This chapter encompasses research method, sources of data, sample populations and sampling technique, data gathering tools, procedure of data collection, and method of data analysis.

3.1 Research Method

The researcher employed descriptive survey method to explore and reveal the current status of the development of EMIS and its challenges in Addis Ababa City Administration in a larger scale and to suggest improvements. In relation to this, Best (2005) stated that a descriptive study describes and interprets what is. It is concerned with conditions or relationships that exist, opinions that are held, processes that are going on, effects that are evident, or trends that are developing. It is primarily concerned with the present.

3.2 Sources of Data

The research aimed at four main groups. At School level, principals, vice-principals and record-officers were selected. At Kebele level, Heads of Kebele Education Offices and data analysts were included in this study. At sub-city level, EMIS personnel and heads of sub-city Education offices as well as heads of Finance and Economic development were sample targets of the study. From regional Education Bureau, head of the Education Bureau and EMIS staffs are selected to provide first hand information in the development of EMIS and its challenges.

In the study, Primary and secondary data were used. Primary sources in this study were from Heads of Addis Ababa Education Bureau and Sub-city education Department, school directors as well as record officers; EMIS experts at different levels; Heads of the sub-city finance and economic development departments; Kebele education office head/coordinators and data analyst. The Institutions and individuals selected as source of data is based on the expectation that they linked to data/ information as part of their responsibilities . Moreover, they were chosen because of their position hold and assigned responsibilities at different

levels of the education hierarchies. Secondary sources were EMIS related documents, the education statistics Annual Abstracts of the Addis Ababa City Administration and the MoE, the annual education census questionnaires, policy documents and other related materials were used to assess the importance of the information.

3.3 Sampling and Sampling Techniques

The researcher took a sample of 140 respondents out of the total population of 218. Of these, seven of the respondents were a head of Addis Ababa Education Bureau and sub-city Education Offices, 24 of them were EMIS staffs in Sub-city, 4 EMIS staffs at Region Education Bureau, 6 Heads of sub-city Finance and Economic Development, 6 heads/coordinators of Kebele education office and 20 Kebele data analysts, 44 primary and Secondary Principals, and, 22 Record officers).

Table 1 Distribution of Sample for the Study

Region	Source of sampling	Samples taken	Percent
Addis Ababa City Administration	Primary schools	.28 primary schools Principals (out of 42) .14 primary schools record officers (out of 28)	33.33 50
	Secondary schools	.16 secondary school Principals (out of 24) .8 secondary school Record-officers (out of 16)	39.10 50
	Kebeles	.10 heads of Kebele Education office(out of 30) .20 data analysts (out of 30)	33.33 50
	Sub-cities	. 3 sub-cities (out-of 10) . 24 EMIS personnel (out of 30) . 6 heads of sub-city education office (out of 6) . 6heads of sub-city Finance and Economic development (out of 6)	33.33 80 100 100
	Region	. 2 Heads of Region Education Bureau (out of two) . 4 Region Education Bureau EMIS personnel(out of 4)	100 100

N.B. Figures in the bracket reveal data for the year 2008/9

Source: Annual Education Abstract of Addis Ababa City Administration

The researcher used simple random sampling technique and availability sampling technique to select the respondents. Besides, simple random sampling was used to select schools, kebeles and sub-cities. The selection of schools, kebeles, and sub-cities are on the grounds of was based on the accessibility and the size of the city in to accounts. Simple random sampling technique was used to select Primary and secondary school directors; record-officers as well as data analysts so as to give equal chances to the respondents and to make the study representative. Heads of region and Sub-city Education Department and kebele Education Office, heads of finance and economic development and EMIS staffs at different levels were selected on the basis of availability sampling technique. Besides, schools (primary and secondary), kebeles and sub-cities were selected based on simple random sampling technique.

3.4. Instruments of Data Gathering

The researcher used questionnaires, interview and document analysis and observation to collect relevant information from sample populations. Two types of questionnaire i.e., some open and many close-ended were employed at school, Kebele, and Sub-city levels to obtain in-depth information concerning the development of EMIS and its challenges. The reason for the selection of questionnaire as a data gathering tool is because it is the appropriate instrument to obtain variety of opinions with in a short period of time from a large population and also helps respondents to express their opinion and views freely. The questionnaire questions consist of Personal information, Educational Management Information Need and Availability, EMIS Functioning, Strategies to improve EMIS, and Challenges facing EMIS Development.

The questionnaire was prepared for three target groups. The first questionnaire was prepared for school Directors, Vice- directors and record-officers. The second questionnaire was provided for Sub-city EMIS personnel and the third was prepared for Kebele Personnel and data analysts.

Moreover, both structured and unstructured interview were prepared for respondents to collect in-depth information for the study. This is because interviews are limited to cases where the subjects of study are humans. The interview questions comprise source of educational information, data collection, kind of data needed for planning, Utilization of Educational data, availability of data, forms and dissemination of data/ information, EMIS capacity strategies, improving EMIS development, and problems that impede the development of EMIS. Interviews are a type of survey where questions are delivered in a face-to-face encounter by an interviewer. Creswell (2009:179) describes interview as useful when participants cannot be directly observed. The interview was prepared for Heads of Addis Ababa Education Bureau and EMIS staffs, heads of sub-city finance and Economic development and education offices.

The Education Statistics Annual Abstract published in five consecutive years by Addis Ababa City Administration Education Bureau and the Annual Educational information from all over the country, will be analyzed. Efforts have been made to triangulate data obtained from different sources.

3.5. Procedure of Data Collection

A survey questionnaire was designed and piloted in two of the schools in Lideat sub-city and one kebele education office that were not included in the study. The questionnaire was filled by four principals, five data analysts and three EMIS personnel and one Kebele coordinator. After that, the structured questionnaires were tested for content validity by experts in the area. These experts working in the EMIS unit of the MoE were asked to assess, review and make judgments concerning how well the items in the questionnaires represent the intended content area. Their comments were included and then the questionnaires were pilot tested. Some improvements were also made depending on the results of the pilot testing. Data were collected, reliability test were made using estimation of split-half method. The Spearman-Brown Formula was also utilized in calculating the correlation between in the SPSS program and therefore the result of the reliability analysis for the questionnaire of EMIS staff at Kebele and Sub-city levels with 112 items were 0.89. The result of reliability estimation for the questionnaire for schools and principals with item 143 was 0.91. Statistical literatures reveal that a test result greater than 0.6 or nearer to one are considered to be reliable. Therefore, the test indicated that the questionnaires were reliable.

3.6. Methods of Data Analysis

Based on the nature of the study and the data obtained, various statistical tools were employed in the study. Both qualitative and quantitative approaches were used. A quantitative approach was used to analyze statistics and numerical data. Besides, qualitative approaches were used to analyze the respondents view. Tables and graphs were also used to show how results were interpreted. For data analysis and interpretation various statistical tools such as frequency count and percentages, scales, rank order, mean, grand mean, T-test, and one-way ANOVA were used to analyze the data and to make the interpretation valid and reliable. Qualitative data were analyzed. Besides, to analyze qualitative data, the researcher used observer impression-the most common analysis of qualitative data. That is, expert observers examined the data, interpret it via forming an impression and report their impression in a structured and some times quantitative form. Coding is an interpretive technique that both organizes the data and provides a means to introduce the interpretation of it in to certain quantitative methods. The answers to open-ended questions and interviews were summarized manually.

Therefore, the following descriptive statistical methods were used to analyze the study: Frequency counts and percentages were employed to describe characteristics of the sample respondents such as job experience, educational level, EMIS related trainings, and respondents' salary, mean distribution and one sample t-test summary of types of educational information needed by school, kebele, and sub-city, mean distribution of the responses of school, kebele and sub-city respondents On degree of educational information, mean distribution of the responses of school respondents on utilization of educational information, mean distribution and ANOVA summary of the problems encountered in collecting Annual Education Census, mean distribution of the functions performed by schools, kebele Education offices and sub-city Education Departments, rankings of the forms and dissemination of Educational Information at different levels of EMIS, rankings of date/information users at different levels of EMIS, mean distribution and one-sample t-test summary of EMIS capacity at school, kebele and sub-city level, , mean distribution and ANOVA summary of respondents on strategies to improve EMIS development and mean distribution and ANOVA summary of problems that impede the development of EMIS

CHAPTER FOUR

4. DATA PRESENTATION, ANALYSIS AND INTERPRETATION

This chapter deals with presentation, analysis and interpretation of the data obtained from the sample population through questionnaires, interviews, observation and document analysis. 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 treats the development of Educational Management Information System (EMIS) and its challenges in Addis Ababa City Administration.

110 questionnaires were distributed to the respondents. Out of these, 44 questionnaires were distributed to schools, 36 to kebele and 30 to Sub-city respondents. Consequently, the rate of return was 95.45 percent. However, 4.55percent of the questionnaires were not returned. This some how affected the analysis of the research.

With respect to the interview, 12 respondents were interviewed for this study in order to strengthen the responses given in the questionnaire. Of these, two of the respondents were heads of Region Education Bureau, 4 of them were EMIS personnel at regional level, and the rest six respondents were from sub-city Finance and Economic Development. All the interviewees gave their responses which are relevant for the development of EMIS.

4.1. Characteristics of Respondents

Under this section, the profile of the sample population of the study is presented and analyzed. It includes Sex, Age, job experience, educational qualification, and training received by principals, vice-principals, record officers, EMIS staff at kebele and sub-city levels, as well as Kebele and sub-city education heads.

Table 2A: Respondents Sex and Age

Respondents	Total Responden		Sex			Age			
	F	%	Male	Female	Total	20-30	31-40	41-50	Above 50
Record officer	22	15.28	10	12	22	8	12	2	-
Principals	44	30.56	30	14	44	22	13	9	-
Kebele Heads	6	4.17	6	0	6	2	4	-	-
Data analysts	30	20.83	22	8	30	19	6	4	1
Finance and Economic development	6	4.17	5	1	6	1	4	1	-
Sub-city EMIS Personnel	24	16.67	17	7	24	12	8	4	-
Sub-city education office heads	6	4.17	6	0	6	-	2	3	1
Heads of Addis Ababa Education Bureau	2	1.38	2	-	2	-	-	2	-
EMIS Staffs at Region level	4	2.77	4	0	4	-	3	1	-
Total	144	100	102	42	144	64	52	26	2

As shown in Table2, from the total respondents (144), 102 of them are males and the rest 42 are females. This clearly shows that majority of the responses in this study is male dominated. This in turn affects the study to some extent. Moreover, the participation of females in different leader-ship positions is below the expected. Therefore, considerable attention should be given in bringing up females in higher leader-ship position. With respect to age, almost half of the respondents (44.44 percent) were in the age ranges between 20-30. Likewise, 36.11 percent of the respondents were in the age range of 31 to 40. This indicates that they are almost young and have somehow better understanding of EMIS.

4.1.1. Educational Qualification and Work Experience of Respondents

Personnel's qualification, experience and training influence the effectiveness of any EMIS unit. Therefore, this section is designed to assess the educational qualification and job experience of the sample respondents at different levels. In order to perform the functions of EMIS at different levels of the education system, personnel working in, Schools, kebele and sub-city level should possess the required qualification. This is because, tasks such as data compilation, data entry, data processing, data analysis, reporting, publication and dissemination of educational information are of complex and higher quality and require qualified manpower in the area. Therefore, the personnel involved in performing these tasks should be competent enough to work on such sophisticated activities and need to have at least a first degree.

Accordingly, sample respondents were asked to indicate their educational level and job experience. Based on the responses given, the summary of their responses is presented as follows.

Table2 B: Respondents Educational level and Work Experience

Item	Recor		Principal		kebele		Sub-city	
	F	%	F	%	F	%	F	%
<u>Educational Level</u>								
Sec.school graduate	3	15	-	-	-	-	-	-
Certificate	1	45	-	-	-	-	-	-
Diploma	9	40	9	25	9	25	2	6.67
First Degree	-	-	23	65.91	24	66.67	23	76.6
M.A/MSc.	-	-	4	9.09	3	8.33	5	16.6
<u>Work Experience</u>								
1-5 Years	11	50	22	50	25	69.44	13	43.3 3
6-10 Years	7	29.55	13	29.55	6	16.67	9	30
11-15 Years	4	20.45	9	20.45	4	11.11	8	26.6
Above 15 Years	-	-	-	-	1	2.78	-	-

As depicted in the table, 65.91% of the principals hold a Degree/ B.A and above. On the other hand, 45% of the record-officers of the sample respondents hold certificates. It is evident that record-officers play significant roles in the functions of EMIS. Therefore, at least they have a college diploma to perform their tasks effectively.

So, the qualification of the principals could be considered sufficient. It is obvious that principals contribute a lot to the functions of EMIS in filling, collecting, compiling, and documenting educational information. Therefore, they must have the required knowledge, skills and attitude in the area of EMIS to perform their duties effectively and efficiently. In addition to this, they should have at least a college diploma. Otherwise, they might not be able to provide the necessary information. Thus, the Addis Ababa city administration should provide short- and long-term trainings to up-grade the skills of principals and record-officers.

The above summary table shows that, more than 76.67% of the respondents in sub-city and 66.67% of the respondents of kebele offices hold degree and above. This indicates that the educational level of almost all of the sub-city and kebele personnel is fairly high. This circumstance will enable them to perform their tasks properly. Therefore, the education bureau should further strengthen the skills of its staffs by offering continuous trainings.

With respect to work experience, the finding reveals that, 50% of the principals have less than 5 years of experience in their current position. On the other hand, record-officers in the schools have higher experience compared to principals. This implies that most of the principals have less experience as principals and in the area of utilization of educational information for decision-making and planning purpose.

In order to develop EMIS, knowledge and experience in the area is crucial. It is significant for the principals to have experience so that they can produce reliable, relevant and timely educational information. Moreover, the work experience and the trainings that principals had taken are more indispensable in the development of EMIS. The more the principals have exposure to EMIS activity; the better will be the quantity and quality of data/information documented. Therefore, Staffs that have worked for several years in their position acquainted with what kind of data/information users need.

The finding shows that 43% of the staffs in sub-city education department have five years and below experience in their current position. Besides, 69% of staff in kebele education office has five years and below experience. This indicates that at Kebele and sub-city level, most of the staff working in education departments are not well experienced in the area. Therefore, the condition is worse in both sub-cities and kebeles. As every body knows, sub-cities have responsibilities to support and control kebeles and schools. Similarly, kebeles education offices have also responsibilities to administer and monitor the daily activities of schools.

Therefore, the experience of staff working in sub-city education department and kebele education office will determine the quality of planning and decision made. So, the Addis Ababa City Administration Education Bureau should assign experienced personnel at kebele and sub-city levels so as to improve the service provided for users and to facilitate the development of EMIS.

4.1.3. Training on EMIS

Knowledge in management, monitoring and evaluation, decision-making and information processing and analyzing will contribute to the development of EMIS. This demands skills in using computers and data compilation and processing. Collecting information from reliable sources and utilizing it for decision-making, planning etc requires deep knowledge and skill in the area.

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 a continuous activity, and one that management needs to pay greater attention to (Tegegn, 2003: 36).

This part is therefore intended to assess EMIS related training of respondents at different levels

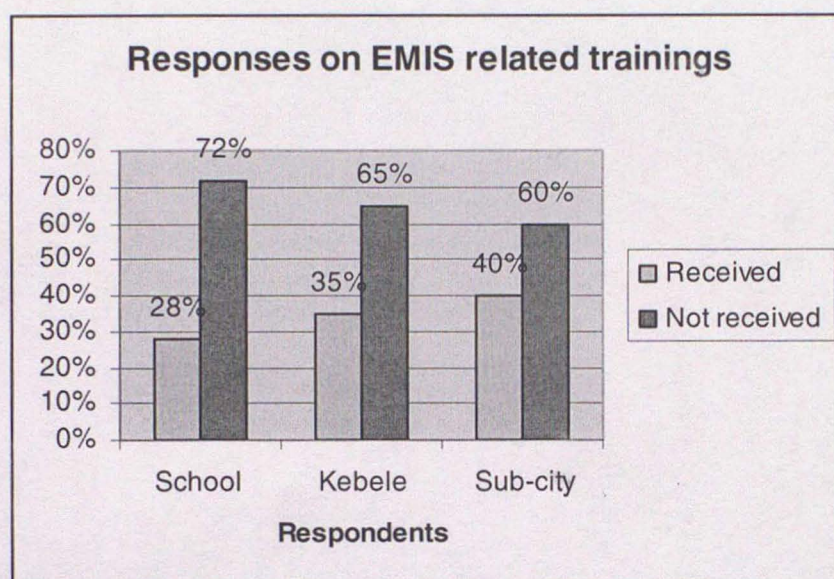


Figure 1 Bar-graph representing EMIS related trainings

As depicted in the summary graph, 60% of the respondents in sub-city and 65% of the respondents of kebele have not received training till now. This implies that, personnel's at sub-city and kebele level are now working without having any EMIS related training.

Those who received the training replied that the trainings they had received were on collecting, storing, processing, and analyzing data, compiling reports, planning and programming, monitoring and evaluation. No respondent had trainings on data entry into computer, data interpreting, documenting, and publication, distribution and dissemination, system development, and programming, projecting future educational trends, maintenance of both hard ware and soft ware and innovative leader ship.

Training personnel in EMIS, and outside EMIS but with the MoE, is a sine qua non of success. Learning from our own successes and failures enhances our own knowledge and provides feedback to effective problem solving strategies at a higher level. This is usual

practice for any learning organization. It allows management and the EMIS team as whole to tackle problems, leading to mastery over the skills needed to achieve the goals (Tegegn, 2003: 65).

4.2. Analysis of Data on the Development of Education Management Information System (EMIS) and Its Challenges

Under this section, different sub-sections such as the adequacy of salary compared to other similar position, the EMIS demanded by Education system, the EMIS produced for users, Factors affecting the development of EMIS, strategies to improve the capacity of EMIS to support decision-making, monitoring and evaluation and planning.

4.2.1. The Adequacy of Salary Compared to Other Similar Position

Salary is one of the most crucial questions of personnel who involved in EMIS units so as to perform their duties properly and achieve the desired goals of their institution. This section is, therefore, explains the feelings of sample respondents on the adequacy of their salary compared to other similar positions.

Responses on the Adequacy of salary

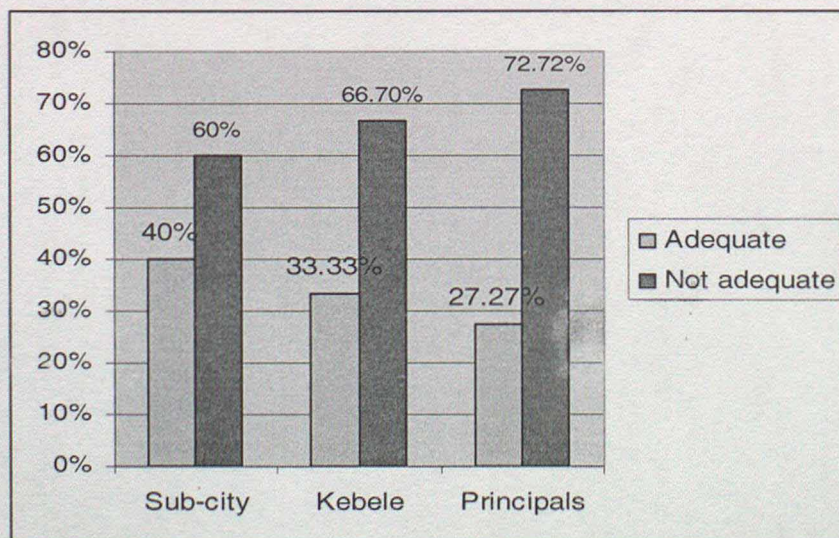


Figure 2: Bar-Graph representing of the responses of sample respondents on the adequacy of salary compared to other similar position

As described in Fig 3.7, more than 60% of respondents at all levels complain that their salary is not adequate compared to others similar position. The inadequacy is more serious at school level where the main information is collected for EMIS. This implies that at all levels of the education system; the staffs working in the sample EMIS units are dissatisfied with their salary compared to other similar position.

The inadequacy of salary might contribute to a high turnover of staff which in turn leads to the loss of experienced personnel and the positions might be replaced by less experienced personnel who will affect the quality of educational information and the development of EMIS.

Hua and Herstein (2003: 24) described that civil service staff may be more likely to leave the public sector after acquiring additional training, especially in the area of IT, as it may enable them to earn a higher salary elsewhere. This may increase staff turnover, which is already quite high. The finding, therefore, shows that due attention should be given to utilize the professional capacity of personnel involved in EMIS unit by providing motivators and incentive mechanisms.

4.2.2. The EMIS demanded by the Education system

Under this topic, various sub-topics are discussed like types of educational information needed at different levels, and degree of educational information available,

4.2.2.1 Types of educational information needed by schools, and other organs

The planners need information about the number of existing primary schools in urban and rural areas (perhaps by district as well), the distribution of enrollment in each school by sex, the average distance traveled by pupils, the number of children per class, the number of pupils per teacher, and so on. Without such basic information, planners find it difficult to justify their argument for the construction of new schools and win the decision-makers over to their side (Tegegn, 2003: 13). Therefore, this section deals with the types of educational information needed by schools, and other organs. The items are presented to the sample respondents to rate them as **very high (5), high (4), medium (3), low (2) and very low (1)**. For the simplicity of analysis the mean values are grouped as >3 = Mostly needed, $2-3$ = partially needed, <2 = rarely needed.

Table 3A. Responses of school respondents on types of educational information needed by school **No. =44**

No	Types of educational information needed	Descriptive Statistics		One sample t-test Test value=3			
		Mean	SD	t	df	Sig.	Mean differ.
1	<u>Student related information</u>						
	Information on learning achievement of children by subject, grade	4.14	.83	9.150	43	.000	1.14
	Information on student numbers, performance/ achievement Level by class/grade, sex, age etc	4.20	.82	9.703	43	.000	1.21
	Information on repeaters by grade, sex and age	3.89	1.15	5.132	43	.000	.89
	Information on students drop-out by grade, sex, and age	3.55	1.56	2.316	43	.025	.55
2	<u>Personnel and teachers related information</u>						
	Information on supervisors report	3.91	1.07	5.613	43	.000	.91
	Information on teachers numbers by subjects, qualification, experience, sex, age	4.23	.80	10.138	43	.000	1.23
	Information on number of supporting staff by sex, qualification, experience, age	4.20	.79	10.054	43	.000	1.20
	Information on teacher's performance rating	4.25	.81	10.230	43	.000	1.25
3	<u>School Space and environment related Information</u>	3.86	1.13	5.057	43	.000	.86
	Information on class size						
	Information on school sections	4.23	.86	9.477	43	.000	1.23
4	<u>Finance and materials related Information</u>						
	Information on financial resources	3.70	1.2	3.740	43	.001	.70
	Information on Utilization of teaching materials	3.14	1.01	-.927	43	.358	-.23
	Information on students text book	3.78	1.15	-.931	43	.127	-.39

(>3= Mostly needed, 2-3= partially needed, <2= rarely needed)

The finding in the table above reveals that types of educational information related to students' number, learning achievement, performance, repetition and drop-out are rated above average. This indicates that the kind of educational information related to students is available in schools adequately. Educational information related to personnel and teachers have mean values ranging from 3.87 to 4.23. This shows that information on teachers' numbers; performance, supervisors report and number of supporting staff are highly needed by schools and other organs.

Besides, types of educational information related to school space and environment rated very high with mean value ranging from 4.6 to 4.53. This clearly indicates that information on class size and number of sections is highly demanded/ needed by sample schools.

With respect to types of information related to finance and materials, information on utilization of teaching materials and students' textbook rated above average. This indicates that the information above is moderately needed in schools. On the other hand, information on financial resources has a mean value of 3.03. This shows that information on financial resources is somehow needed in sample schools.

Moreover, one-sample t-test procedure was used to test whether the obtained scores for the variables differ from the specified constant value (3) for the type of educational information needed by schools at 95% confidence level. The highest obtained mean difference was 1.25. (For item number 4 for information on teachers' performance and students' dropout by grade .This implies that the school respondents highly accepted that the kind of information needed by schools is students, teachers, personnel, school space and finance as well as materials related information. The rated mean value for each item is significantly higher than that of average test value (3). Thus, it is confirmed by the respondents that the above types of educational information are highly needed.

Furthermore, in the open-ended question, the sample respondents explained that information on period allotment, teaching load per subject, educational quality improvement are considerably needed by sample schools and other organs for teaching-learning process. It is necessary to communicate information in ways that are relevant and understandable to the recipient group. 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 (Villanueva, 2003: 14).

4.2.2.2 Types of Educational Information needed by Kebeles and Sub-city

The kind of educational information needed by all levels of the education hierarchy vary based on their interests from place to place. Planners, decision makers, policy makers NGOs etc need various kinds of information at Kebele and sub-city education department. This information include number of students, teachers and administration bodies, kinds of schools

(public, private, church, student-textbook ratio, student-teacher ratio, student-section ratio, drop-out and repetition rate, facilities, resources available etc.

This section, therefore, deals with the types of educational information needed by kebeles and sub-city. The items are presented to the sample respondents to rate them as **very high (5), high (4), medium (3), low (2) and very low (1)**. For the simplicity of analysis the mean values are grouped as >3 = Mostly needed, $2-3$ = partially needed, <2 = rarely needed.

Table3B. Responses of Kebele and Sub-city Respondents on types of educational information needed

No.	Items	Descriptive Statistics				Grand mean	Independent t-test			
		Kebele No.=36		Sub-city No.=30			t	df	Sig.(2-tailed)	Mean Diff.
		Mean	SD	Mean	SD					
1	<u>Student related information</u> Information on learning achievement of children by subject, grade	3.64	1.31	4.13	.82	3.89	-1.792	64	.078	-.49444
	Information on student numbers, performance/ achievement Level by class/grade, sex, age etc	3.72	.94	3.97	.81	3.84	-1.117	64	.268	-.24444
	Information on repeaters by grade, sex and age	4.19	.82	4.43	.68	4.31	-1.271	64	.208	-.23889
	Information on students drop-out by grade, sex, and age	2.94	.79	3.0	.98	2.97	-4.836	64	.000	-1.05556
2	<u>Personnel and teachers related information</u> Information on supervisors report	3.89	1.04	4.07	1.05	3.98	-.690	64	.492	-.17778
	Information on teachers numbers by subjects, qualification, experience, sex, age	3.97	.97	4.27	.74	3.92	-1.363	64	.178	-.29444
	Information on number of supporting staff by sex, qualification, experience, age	3.72	.88	3.87	.89	3.79	-.657	64	.514	-.14444
	Information on teacher's performance rating	3.0	1.41	4.0	.87	3.5	-3.374	64	.001	-1.0000
3	<u>School Space and environment related Information</u> Information on class size	4.25	.84	4.4	.72	4.33	-.768	64	.445	-.15000
	Information on school sections	4.03	1.03	4.37	.72	4.2	-1.522	64	.133	-.33889
4	<u>Finance and materials related Information</u> Information on financial resources	3.19	.89	3.43	.77	3.31	-1.152	64	.253	-.23889
	Information on Utilization of teaching materials	3.14	1.01	3.37	.96	3.26	-.927	64	.358	-.22778
	Information on students text book	3.78	1.15	4.17	.83	3.97	-.931	64	.127	-.38889

(>3 = Mostly needed, $2-3$ = partially needed, <2 = rarely needed)

As described in the finding of the above table types of information related to students performance, learning achievement, drop-out and repetition rate have grand mean values ranging from 2.97 to 4.31. This indicates that the information above is highly needed by kebeles and other organs except information on students drop-out with mean value 2.97. Therefore, information on students' dropout is some how needed by kebeles and other organs.

Besides, information on supervisors report, teachers numbers by sex ,age subjects, qualification, experience and performance as well as supporting staff by sex, qualification have grand means ranging from 3.5 to 3.98. Therefore, the above types of educational information are highly needed by sample kebeles and sub-cities for different purposes.

Furthermore, information related to school space and environments are rated 4.33 and 4.2. Therefore, educational information on class size and school sections are highly demanded by sample respondents officials to determine students enrollment, budget allocation, number of teachers and students text-books etc.

On top of this, types of educational information related to finance and materials are rated above average with mean values ranging 3.26 to 3.98 by most of the respondents. Therefore, one can clearly understand that information on financial resources, utilization of teaching materials students textbooks are considerably demanded by officials in sample kebeles and sub-cities to know how much the resources are utilized effectively and efficiently and to determine the financial resources needed by kebeles and sub-cities for the next fiscal years.

In addition to this, independent t-test was employed to see the mean difference at the significance level of 95% between kebele and sub city respondents. As the t-test described, there is no significance difference between kebele and sub-city respondents on types of educational information needed by kebeles and sub-cities except for the items in number 4 and 8 ($t=-4.84$, $p=.000$ and $t=-3.37$, $p=.000$) for students drop-out and teachers' performance rating. Thus, the above types of educational information are significantly needed by sub-city than that of kebele respondents.

In the interview questions, the respondents from region education bureau EMIS units and Sub-city finance and economic development were asked to mention types of educational information needed by their bureau and they replied that information on number of students, teachers, sections, text-books, schools, teaching materials, training need assessment, teachers' training, as well as information on coverage, efficiency, quality and equity are types of information that is highly needed at sub-city and region level.

Carrizo, Sauvaget and Bella (2003: 23-24) describe the types of information needed at each levels. People belonging to the macro-level are responsible for strategic decision concerning the planning of the whole of the education system. According to them, the intermediate level comprises decision-makers who are in charge of management and control of the allocation of resources, for an efficient and equitable distribution. It requires more specific data to detect eventual malfunctioning and to optimize the use of resources. The micro-level corresponds to operational tasks, and to more daily activities, closer to school. Decision here is local and immediate reach, and hence need detailed information.

Thus, the Addis Ababa City Administration should provide different programmes and mechanisms to improve the types of information needed by all levels of the education system. This in turn leads to the development of EMIS

4.2.2.3. Degree of Educational Information Available

The main purpose of an EMIS is to integrate information related to the management of educational activities, and to make it available in comprehensive yet succinct ways to a variety of user. This includes teachers, principals, curriculum planners, inspectorate officials, financial controllers, planners, policy advisers and political leaders, as well as parents and students. In this way, the combined information resources of the EMIS are at the service of the entire community (Villanueva, 2003:5).

Thus, the different levels of the education system are expected to collect and make available the data/information on students and different personnel, school buildings and other facilities, teaching materials and financing and expenditure. In general, the different levels of the

educational hierarchy are expected to have available information consisting a set of indicators depending on the administrative level and the type of decision (strategic and planning, or management and supervision, or operational) they make.

In order to assess the extent of educational information available to schools, kebeles, sub-city and region, the information items are presented to be rated by respondents as: very high =5, High = 4, Medium = 3, Low= 2 and very low =1. For the simplicity of analysis the mean values are grouped as >3= sufficiently available, 2-3= partially available, <2= rarely available.

Table 4: Responses of the respondents on degree of educational information available

No	Items	School No.=44		Kebele No.=36		Sub-city No.=30		Grand Mean
		Mean	SD	Mean	SD	Mean	SD	
1	<u>Personnel and Teacher</u>							
	Teacher employment (transfer, turnover)	3.25	1.4	3.39	1.36	3.47	1.38	3.37
	Administrative workers employment(transfer, turn over)	3.16	1.38	2.14	1.96	3.2	1.6	2.83
	Teachers number by subjects, qualification, experience, sex, age	4.61	0.49	4.47	0.91	4.07	0.82	4.23
2	<u>Student</u>	4.18	0.49	3.39	1.36	3.83	1.09	3.8
	Net enrolment rate by grade and gender							
	Gross enrolment rate by grade and gender	3.84	0.81	3.5	1.55	3.93	1.24	3.76
	Student wastage by grade /gender	3.2	1.39	3.72	1.33	4.03	1.29	3.65
	Enrolment by grade / gender	3.25	1.4	4.14	1.07	4.23	0.8	3.87
	Student attendance / discipline	3.34	1.45	3.58	1.23	3.8	1.08	3.57
	Student-teacher ratio by grade and gender	3.63	1.38	3.92	1.15	4	0.86	3.85
	Student-text book ratio by grade and gender	4.18	0.81	3.61	1.01	3.07	1.36	3.62
3	<u>Finance</u>							
	School Annual Expenditure budget by type	3.64	1.1	3.5	0.98	2.87	1.34	3.34
	Annual revenue budget by source of income	3.55	1.12	3.53	1.01	2.93	1.33	3.27
	Unit cost per student	3.48	1.27	3.86	0.75	3.53	1.26	3.62
4	<u>Educational Facilities and Materials</u>	3.39	1.43	4.28	0.75	2.97	1.57	3.55
	Teacher's Guide by grade							
	Teaching aids by subjects, grade	3.61	1.1	3.78	1.08	3.63	1.27	3.67
	Students' text-book by grade, subjects	4.61	0.49	3.78	1.06	4.087	0.85	4.16
	Students' desk	4.2	0.79	3.72	1.07	3.07	1.13	3.66
	Teachers' educational materials and goods (black board, shelf, tables, chairs, computer, calculator, type writer etc)	3.57	1.14	3.36	1.18	3.47	1.23	3.47
	Latrine, sport field, adequate water, Library, Laboratory, Plasma	3.91	0.79	3.14	1.13	3.3	1.53	3.45

(>3= sufficiently available, 2-3= partially available, <2= rarely available)

As can be seen from the table above, the degree of availability of educational information related to students net enrollment rate, Gross enrollment rate, student wastage, student-teacher ratio and student text-book ratio have grand means ranging from 3.57 – 3.87. Therefore, they are sufficiently available above average and identified by respondents as common educational information available at all levels of the education hierarchy.

Besides, concerning personnel and teachers i.e., teacher employment, and teachers number rated above average with mean value 3.37 and 4.23 respectively. This implies that they are sufficiently available at all levels of the education hierarchy. On the other hand, educational information on administrative staff employment has a grand mean value of 2.83. This clearly shows that it is identified as partially available in the sample schools, Kebele and sub-city.

Furthermore, concerning the degree of educational information related to finance i.e., school annual expenditure budget, annual revenue budget and unit cost per student have grand means ranging from 3.34 to 3.62. Therefore, it is mostly available at all levels of EMIS. Thus, the above information is given sufficient consideration at all levels of the educational hierarchy of the Addis Ababa City Administration.

With respect to educational facilities and materials, information on teacher's guide, teaching aids, students' textbook and teaching materials and good have grand mean values ranging from 3.45 to 4.16. This implies that the above educational information is mostly available at all levels of the educational hierarchy of Addis Ababa City Administration. Generally, the result reveals that many of the educational information are sufficiently available in Addis Ababa City Administration.

In the interview questions, the respondents were asked to explain to what extent educational information is available in their office and they described that although it is difficult to measure to the availability of information, all the information mentioned above is available for the users and stakeholders sufficiently. The information obtained is collected through Annual Education Census questionnaire

According to Chapman and Mahlck (1993:4), improving the information available to decision-makers was identified as a key element in improving educational management and, in turn the efficiency of the education system. Thus, the availability of data/ information on administrative workers employment needs special consideration at all levels of EMIS.

4.2.2.4. Problems Encountered in Collecting Annual Education Census

The problems related to collecting Annual Education Census encompass shortage of time, lack of proper orientation, poor quality of data collected and so on. Most often, data are collected by means of questionnaires prepared in a centralized or through decentralized regional offices.

The Education Statistics Annual Abstract (2007:1) describes that the Ministry of Education collects data on basic variables from all levels of education based on standard questionnaire designed for pre-primary (KG), Non-formal Adult Basic Education. The Statistical data collected through these instruments are compiled and published in Education Statistics Annual Abstract. The Annual Education Census questionnaire is the most important method of data collection of education.

A number of problems are evidently associated with collecting the questionnaire. This can be observed from the Education Statistical Annual Abstract (2005: i) of the Addis Ababa City Administration which urges/advices all stakeholders in the education system to cooperate in collecting the data correctly and timely so that reliable information can be produced in time.

Thus, in order to assess the problems encountered in collecting the Annual Education Census Questionnaire, the major problems are presented in five point Likert scale to be rated by the respondents as: **very serious =5, serious =4; partially serious = 3, Less serious =2, Not a problem=1**. For the simplicity of the analysis, the mean values are classified as >3= serious problems, 2-3= moderately serious, <2= Not a problem

Table 5: Responses of the Respondents on the problems encountered in collecting Annual Education Census

No	Item	School N=44		Kebele No=36		Sub-city N=30		Grand mean	Comparing Means One-way ANOVA	
		Mean	SD	Mean	SD	Mean	SD		F	Sig
1	Missed Information (not collected but relevant)	2.64	1.38	3.89	1.07	3.83	1.19	3.45	18.121	.000
2	Poor Quality of data collected (not reliable, relevant and timeliness)	2.61	1.45	3.75	1.12	3.7	1.19	3.35	14.738	.000
3	Lack of training on how to collect the questionnaire	2.45	1.05	4.03	1.4	3.43	1.26	3.3	24.400	.000
4	shortage of time to collect the questionnaire	2.68	1.38	3.75	1.04	3.13	1.41	3.19	12.981	.000
5	Lack of clear guide-lines on how to collect the questionnaire	2.8	1.31	3.47	1.21	3	1.37	3.09	7.626	.001

(>3= serious problems, 2-3= moderately serious, <2= Not a problem)

According to the table above, the grand mean for missed information, poor quality of data collected, lack of training on how to collect the questionnaire and shortage of time and lack of clear guide-lines are rated as serious problems with grand means ranging from 3.09 to 3.45. Therefore, at all levels the problems presented to the respondents are rated as serious. The finding, therefore, implies that all the problems listed in the table are existent at all levels of EMIS.

Furthermore, one way ANOVA was employed to test if there is any discrepancy between the groups of respondents on the problems related to collecting the annual education questionnaire. The result of the ANOVA test and the associated p-values show that there is statistical difference between the groups of respondents at 95% level of significance concerning missed information, poor quality of data, lack of training, and lack of clear guide-lines and shortage of time to collect data. Besides, the post hoc Tests shows that there is significant mean difference between school and kebele and school and sub-city respondents, but not between kebele and sub-city respondents. This shows that the problems encountered in collecting annual Education Census are more serious in those kebel and sub-city than schools under the investigation.

In the interview questions, the respondents were asked to mention problems encountered in collecting the annual education census questionnaire and they replied that delay of data, lack of obtaining accurate, quality and timely data, failure to fill the Annual Education Census neatly and correctly, distorted information, untimely arrival of information are the major problems they faced in collecting the Annual Education Census Questionnaire.

The documentary analysis also shows that the Education Statistics Annual Abstract published by the bureau had never been completed on the planned time.

The quality, validity, and reliability of the data/ information collected through the questionnaire largely depend on the exhaustiveness, exactness, clarity, timeliness, relevance, and completeness of the items in the questionnaire. The instruction accompanying the questionnaire should be precise and understandable. Trainings should be given to those who are involved in filling, collecting, organizing and processing it.

With respect to this, Carrizo, Sauvagest and Bella (2003: 42) emphasize that in preparing the questionnaire, its length, presentation of instructions, explanatory notes definitions, clarity, simplicity, un ambiguity of the items should be given due attention.

Thus, missed information, poor quality of data, lack of training and shortage of time and lack of clear guidelines on how to collect the questionnaire are identified as serious problems encountered in collecting Annual Education Census Questionnaire, by the respondents at all levels of the Addis Ababa city Administration. Therefore, the Addis Ababa City Administration Education Bureau and the Central EMIS in the MOE should design a mechanism to address these problems.

4.2.2.5. EMIS Functions Performed by Schools

It obvious that educational information is largely collected from schools. However, the information collected from school may vary from country to country based on the regularity of the collection and the nature of the information. Though the functions performed at

different levels of EMIS vary, various stakeholders including NGOs, the community and others have a lot of interest in the information generated by schools.

Therefore, the common functions performed at school level are presented to be rated as: very good = 5, Good = 4; satisfactory =3; poor =2 and very poor = 1. For the simplicity of the analysis, the mean values are classified as >3= Mostly done, 2-3=partially done, <2= rarely done

Table 6A: Responses of the School respondents on EMIS Functions (No.=44)

No	Item	Descriptive Statistics	
		Mean	SD
1	Filling the Annual Education Census questionnaire	4.02	0.84
2	Collecting educational data	4.14	0.76
3	Documenting and storing data	3.66	1.08
4	Dissemination of data	3.34	1.06
5	Reporting timely	4.07	0.84

(>3= Mostly done, 2-3=partially done, <2= rarely done)

The table above reveals the summary responses obtained from the school respondents on EMIS functions performed at school level. As can be observed from the table, filling the Annual Education Census, collecting educational data and reporting timely have mean values ranging from 3.34 to 4.14. Therefore, these functions are mostly done by the sample schools. Thus, schools should take appropriate corrective measures to evaluate their performance. This task should be based on data/ information. This condition, therefore, requires the attention of the school administration. The study, however, shows that the functions of filling the Annual Education Census (AEC) questionnaire, collecting educational information and reporting timely are appropriately performed in schools. Therefore, the status of EMIS functions could be considered as good or satisfactory.

According to Hua and Herstein (2003:4), the management functions of EMIS include collecting, storing, integrating, processing, organizing, out putting, and marketing educational data and statistics in a timely and reliable fashion. These specific tasks serve the needs of educational management, resource allocation, and policy formulation, such as

planning and budgeting, policy research analysis, monitoring and evaluation, allocating school supplies, and domestic and global communication and collaboration.

In general, the study shows that EMIS functions performed by schools are rated high. This suggests that schools are now in a better position for providing the necessary information to the concerned bodies and to their own expenditure. This will positively contribute to the development of EMIS in Addis Ababa City Administration.

4.2.2.6 EMIS Functions Performed by Kebele and sub-city Education Department

Kebeles and Sub-cities are administrative levels located below Region. These levels are responsible in verifying the data collected from the schools to detect the errors made in filling the questionnaire. Besides, kebeles are very close to schools and know them best other than other administrative levels. Furthermore, they serve as bridges between schools and sub-cities.

Hence, in order to examine the extent to which EMIS functions are performed at Kebele and sub-city level, the following items are presented to the sample respondents and the findings obtained are summarized in the following table. The items are presented to be rated as: **very good = 5, good = 4, satisfactory =3; poor =2, very poor = 1**. For the simplicity of the analysis, the mean values are classified as **>3= Mostly done, 2-3=partially done, <2= rarely done**.

Table 6B. Responses of the Respondents on functions performed by kebele Education offices and sub-city Education Departments

No	Purposes	Descriptive Statistics				Grand Mean
		Kebele No.=36		Sub-city No.=30		
		Mean	SD	Mean=30	SD	
1	Collecting data	3.78	1.08	3.53	1.45	3.66
2	Compiling educational data	3.86	1.11	3.86	1.2	3.86
3	Analyzing, Documenting and storing data	3.58	1.13	3.73	1.12	3.66
4	Dissemination of data	3.86	0.95	3.7	1.11	3.78
5	Reporting timely	3.47	1.19	3.8	1.1	3.64

(>3= Mostly done, 2-3=partially done, <2= rarely done)

As shown in the table, collecting data from schools, compiling data, data analysis and dissemination of data have grand means ranging from 3.64 to 3.86. Therefore, these are the main EMIS functions performed by the sample Kebele and sub-city education department. So, this implies that the above EMIS functions are satisfactorily performed by sample Kebele and sub-city education departments.

In open-ended questions, the sample respondents were also asked to mention what strategies should be taken to upgrade EMIS functions at sub-city level, and they indicated modern way of data collecting, qualified person in the area of EMIS, data analyst and data disseminator, continuous training and awareness raising program and timely organization of education statistics questionnaire as strategies to upgrade EMIS functions at sub-city level.

According to Hua and Herstein (2003:4), the management functions of EMIS include collecting, storing, integrating, processing, organizing, out putting, and marketing educational data and statistics in a timely and reliable fashion. These specific tasks serve the needs of educational management, resource allocation, and policy formulation, such as planning and budgeting, policy research analysis, monitoring and evaluation, allocating school supplies, and domestic and global communication and collaboration.

Therefore, considerable emphasis should be given to upgrade the capacity of EMIS staff and build EMIS unit at kebele and Sub-city level with the required human and material resources. As it was described earlier, the kebele education offices are responsible for the overall EMIS functions of schools. Thus, in order to ensure the development of EMIS in Addis Ababa city Administration, kebeles should perform EMIS functions properly with special attention.

4.2.3. Analysis of the EMIS Produced for Users

This section deals with the analysis of data/ information users, forms and dissemination of educational information at different levels and utilization of educational information.

4.2.3.1. Data/information Users

Schools, kebele education office, kebele administration, sub-city education office and finance and economic development; region education bureau and NGOs etc are information users at

different level in the Addis Ababa City Administration. These bodies use educational information for different purposes. The utilization of educational information may vary from office to office and from level to level.

Therefore, this section is designed to assess data/information users at different level of EMIS in Addis Ababa City Administration Education system. The items are listed in the table below to be ranked by sample respondents.

Table 7: Rankings of the Respondents on Data/ Information Users at different Levels of EMIS (No. =110)

No	Body that uses of data/information	Weighted Mean	Std. Devi.	Rank
1	Kebele Education Office	4.22	0.99	1
2	Parents and Teachers Association	3.66	1.06	3
3	Decision-makers	3.61	1.29	5
4	Policy-makers	3.6	1.28	6
5	Sub- city Education Department	3.66	1.36	3
6	Regional Education Bureau	3.72	1.36	2
7	NGOs	3.45	0.98	9
8	Administrative Bodies	3.55	1.39	8
9	Other Kebele offices	2.6	1.32	10
10	Parents and communities	3.56	1.09	7

As described in the table above, kebele education office is ranked first by the sample respondents. This clearly depicts that at all levels data/information are highly used by kebele education office for planning ,budgeting ,decision-making, enrollment projection, policy making, monitoring and evaluation purposes. On the other hand, region education bureau and sub-city education department as well as PTA were ranked second and third respectively. This implies that, region education bureau and sub-city education department as well as PTA are moderately used educational information for different purposes next to kebele education offices.

However, decision-makers and police-makers are ranked fifth and sixth. This indicates that decision-makers and police-makers do not use educational information frequently. This situation might be affect the overall educational system.

On the other hand, NGOs and other kebele offices are poorly used educational information for various functions. This indicates that the utilization of educational information to make sound-decision, planning, monitoring and evaluation as well as projecting students enrollment are weak compared to kebele, sub-city and region education bureau.

In the interview question, the respondents were asked to mention the data/information users and they replied that region education bureau, clients, stakeholders, decision-makers, NGOs, policy makers, educational experts at different levels, teachers, students, Government Officials, and Charity organizations as major data/ information users.

According to Villanueva (2003: 13) at national level, the ministers, legislators, the members of cabinets/parliaments and heads of international bodies need this information for policy making, legislation, programme development and other national concerns. The middle level managers, including bureaucrats, need it for organization and control, project implementation, budget preparation, programming, monitoring and evaluation. At the operational level, coordinators, local organizations /units/ and desk offices need information for their day to day operations, supervisor, reporting, action planning, and advocacy and mobilizing activities. As further described by Hue and Herstien (2003: 7) policy makers, planners, policy, analysts and other stakeholders are the users of the data and information. Therefore, bodies at different level should utilize education information effectively and efficiently so as to improve the development of EMIS in Addis Ababa city administration.

4.2.3.2. Forms and Dissemination of Educational Information at Different levels

Hand written files, computer files, published materials, removable disks, and so on are various forms of data/information available at a different echelon of the education system. These various forms of educational information can be disseminated through soft copy, web-pages and meetings to the users.

This section is designed to investigate forms and dissemination of educational information at different level of EMIS in Addis Ababa City Administration. The forms and dissemination of educational information are listed in the table below for the respondents to be ranked by sample respondents.

Table 8: Ranking of Respondents on the Forms and Dissemination of Educational Information at Different level of EMIS (No.=110)

No.	Forms and Dissemination of educational information	Weighted Mean	Std. Devi.	Rank
1	<u>Forms of educational Information</u>			
	Computer file	3.24	1.35	3
	Removable disks (floppy, flash, CD-Rom)	3.3	1.22	2
	Type written paper files	3.36	1.20	1
	Hand written paper files	3.05	1.78	4
2	<u>Dissemination of educational information through</u>			
	Web-pages/Networks	2.47	1.38	3
	Electronically(soft copy)	3.23	1.25	2
	hard copy & Meetings(staff, PTA& others)	3.51	1.23	1

As depicted in the table above, type written files are ranked first by the respondents. This clearly indicates that at all levels files comprise relevant educational information are still stored or made available in type written forms. Though, it could have some advantages, this form of storing information has a lot of shortcomings, particularly if it is not handled properly. The files may be damaged destroyed faded or lost.

On the other hand, type removable disks and computer file were ranked second and third. However, as shown from the table, the difference in grand means for type written documents and hand written files is large. This indicates that more than three fourth of the EMIS units data/information are stored in hand written files. Computers and removable disks such as flash, CD-ROM, and floppy are moderately used and websites/networks are rarely used. Therefore, these devices can largely contribute to the development of EMIS and to tackle EMIS challenges as well as to make EMIS efficient and effective. So that, considerable attention should be given by the concerned body to preserve the files for a long period of time.

With respect to dissemination of educational information, hard copy and meetings are ranked first by the sample respondents. This implies that at all levels; educational information is highly/mainly disseminated through hard copy and staff, PTA & other meetings. However, on the other hand, softcopy and web pages were ranked second and third. As seen from the table however, the difference in weighted means for dissemination of educational information through hard copy and meetings, and web-pages are large. This clearly shows that most of the educational information is disseminated through, hard copy and staff/ PTA and other meetings to the users. But softcopy and web pages are rarely used as information dissemination. This clearly shows that information users cannot get educational information easily through soft copy and web-pages. Therefore, due emphasis should be given by Addis Ababa city Administration to improve dissemination of educational information.

In the open ended questions, the sample respondents were asked to describe what mechanisms should be applied to organize and disseminate educational information and most of the respondents suggested that networked the information at all levels, establish well-organized ICT program in all educational institutions and disseminating educational information through annual abstracts electronically etc are mechanisms that should be applied to organize and disseminate educational information.

In the interview question, the respondents were asked to list down in what forms educational information is placed and disseminated and majority of the respondents assured that data /information are available mainly in the form of hard copy, CD, flash disks, soft copy and in the computer. Besides, the educational information is disseminated to the users through Annual Education Abstracts.

Carrizo, Sauvageot, and Bella (2003: 25) describe that the components of dissemination and distribution of information produced by EMIS to different concerned structures and to the general public are composed of several components: the dissemination of hard copy (paper), documents (editing, publishing, printing) and the dissemination of electronic documents (setting up and updating internet websites, CD-ROM, on-line documents.)

4.2.3.4. Utilization of Educational Information

The Education Statistics Annual Abstract (2005:1) states that educational statistics data plays an important role in providing relevant and reliable statistical information for making rational decisions; further planning and programming, evaluating and monitoring, reviewing of policies and strategies of the education system.

This section is therefore, intended to assess as to what extent the information is used to improve the education system at different level. The respondents were asked to rate the utilization of educational information by their office as: very high = 5, High = 4, Medium =3, Low =2 and very low = 1. For the simplicity of the analysis, the mean values are classified as >3= Mostly utilized, 2-3= partially utilized, <2= rarely utilized.

Table 9: Responses of the Respondents at different levels on Utilization of Educational Information

No.	Purposes for which educational information is demanded/used for	School No.=44		Kebele No.=36		Sub-city No.=30		Grand Mean
		Mean	SD	Mean	SD	Mean	SD	
1	Sound decision- making	3.66	1.51	3.94	0.86	4.2	0.82	3.93
2	School planning and budgeting	4.16	0.8	3.78	1.08	3.76	1.12	3.9
3	Evaluating the functioning of the school	4.55	0.79	3.97	0.99	4.33	0.79	4.28
4	Monitoring the ongoing process of the school	3.61	1.57	3.75	1.01	4.2	0.83	3.85
5	Enrolment projection	4.14	0.67	4.39	1.25	3.9	1.2	4.14
6	Policy-making	4.05	0.77	4.11	0.81	4.1	0.81	4.09
7	Conducting studies	2.66	0.5	3.36	1.29	2.83	1.51	2.95
8	Project implementation	4.14	0.76	4.08	0.89	4.6	0.49	4.27

(>3= Mostly utilized, 2-3= partially utilized, <2= rarely utilized)

The findings in above table show that at different levels of the Addis Ababa City Administration, the utilization of educational information for sound decision-making, planning and budgeting, monitoring evaluating the overall functions, enrollment projection and project implementation have grand means ranging from 2.95 to 4.28. This indicates that the above functions are highly utilized in Addis Ababa City Administration except conducting studies. Therefore, the capacity of schools, kebeles and sub-cities with respect to utilizing the above information is high. In addition, the above functions are sufficiently exercised in Addis Ababa City Administration. On the other hand, the utilization of

information to conduct studies has a grand mean of 2.95. This implies that due emphasis is not given to conduct studies at school, kebele & sub-city level.

In this regard, Sub-cities are expected to have organized EMIS units. They should be able to prepare educational information which can readily be utilized by the administration of the city and other stakeholders of the education system. Besides, kebeles have more responsibilities in Addis Ababa City Administration than ever before. Therefore, they are expected to organize, co-ordinate, lead, monitor and evaluate the overall functions of schools and to provide the necessary support to schools. Furthermore, schools are expected to utilize the available information for planning decision-making and management.

In the interview question, the respondents were asked to describe to what extent educational information is demanded and they confirmed that educational information is demanded for planning, research, budgeting, decision-making, customer service delivery, students' enrolment projection, and to know pupil-teacher ratio, pupil-text-book ratio, pupil-section ratio, Gross enrolment, and net enrolment ratio and to ensure quality of education and measure the coverage and equity of the education system as well as to reduce educational wastages.

Thus, these all functions seek due attention by the higher authorities of the Addis Ababa City Administration. Therefore, the utilization of educational information at different levels of the Addis Ababa City Administration contributes for the development of EMIS and to alleviate the challenges they faced before.

4.2.4. Analysis of Challenges facing EMIS Development

This section treats problems that impede the development of EMIS at school, kebele and sub-city levels and strategies to improve EMIS development.

4.2.4.1. Problems that impede the development of EMIS

According to Hua and Heristien (2003: 25), the development of EMIS involves nurturing a new management culture more than establishing a data and information system. The process of data collection, integration, analysis, and dissemination is important, but even more critically; it is the culture of data sharing, information use, and organizational management that leads to the effectiveness of the EMIS development.

Amongst the various that might hinder the development of EMIS, the major ones were presented to the respondents to be rated by five points Likert scale as: **very serious problem =5, serious problem =4, medium problem =3, sometimes a problem =2; not a problem =1**. For the simplicity of the analysis, the mean values are classified as (>3= serious problems, 2-3= moderately serious, <2= Not a problem)

Table 10: Responses of Respondents on Factors affecting the development of EMIS at Different Levels

No.	Challenges facing EMIS	School N=44		Kebele No=36		Sub-city N=30			Comparing Means One- way	
		Mean	SD	Mean	SD	Mean	SD	Grand mean	F	Sig
1	<u>Administrative/Procedures</u>									
	Poor coordination and leadership	2.95	1.33	3.83	1.09	3.63	1.14	3.47	5.43*	.006
	Lack of system and program monitoring and evaluation	3.02	1.44	3.83	1.14	3.73	1.12	3.53	5.34*	.006
	Poor record keeping	3.2	1.39	4.28	0.77	4.1	0.81	3.86	10.92	.000
	Lack of organizational readiness	3.11	1.37	3.69	0.92	4.06	1.3	3.62	6.97*	.001
2	<u>Logistics (facilities, computer and others)</u>									
	Lack of computer, CD-RW, Flash disk	3.61	1.33	3.92	0.88	3.76	0.91	3.76	.82	.442
	Difficulties in maintaining IT hard ware	3.52	1.03	3.72	1.02	4.13	0.81	3.79	3.87	0.24
3	<u>Data related challenges</u>									
	Lack of data integration	3.27	1.29	3.97	0.85	4.13	0.76	3.79	7.15*	.001
	Delay in data production and data release	3.45	1.01	4.06	0.78	4.13	0.81	3.88	7.29*	.001
	Duplication and overlap of data	3.25	1.3	3.72	1.07	4.06	1.36	3.68	6.49*	.002
	Lack of feed-back to data providers	3.11	1.16	3.94	0.97	4.53	1.36	3.86	9.75*	.000
	Inaccurate and Incomplete information	3.25	1.39	4.28	0.73	4.06	1.37	3.86	17.95*	.000
4	<u>Structure and Manpower</u>									
	Lack of structure in the organization /school	2.83	1.12	3.02	1.15	2.99	1.13	2.95	6.34*	.003
	Inadequate manpower	3.41	1.4	3.86	0.92	3.36	1.08	3.63	5.99*	.003
	High turn over rate	3.11	1.35	2.64	1.08	2.82	1.11	2.85	2.14	.123
	Brain-drain (well trained staff leave)	3.25	1.37	3.75	1.05	4.43	0.5	3.81	5.44*	.006
	Lack of dedicated professionals and	3.34	1.38	3.81	0.75	3.7	1.1	3.62	11.42	.000
	Lack of clearly defined responsibilities for staff	3.36	1.39	4.03	0.80	4.56	0.5	3.98	5.00*	.008
	Lack of shared vision/planning for EMIS	3.18	1.36	3.92	0.76	3.93	1.52	3.68	8.11*	.001
5	<u>Finance</u>									
	Budget constraint	3.16	1.36	3.5	1.04	3.36	1.08	3.34	.96	.38
	Unfair budget allocation	3.24	1.37	3.97	0.93	3.43	1.08	3.4	.10	.90

(>3= serious problems, 2-3= moderately serious, <2= Not a problem)

*p<0.05, two tailed

As can be seen from the table above, concerning administrative challenges the grand means for poor coordination and leadership, lack of system and program monitoring and evaluation, poor record keeping and lack of organizational readiness are rated as serious problems with mean values ranging from 3.47 to 3.86. This implies that, in general, all the challenges listed in item 5.1.1 are considered as serious problems by all respondents at all levels of the educational hierarchy. Therefore, one can conclude that lack of coordination and leadership and lack of a system of program monitoring and evaluation are evident in the sample schools, kebeles and sub-cities as serious problems.

With respect to logistics (facilities, computers and other), the grand means for lack of computer, CD-RW, flash disc and difficulties in maintaining IT are rated as serious problem (3.76 and 3.79 respectively). This clearly indicates that lack of computers and difficulties in maintaining IT hardware are considered as serious problems by most of the sample respondents. One can therefore, conclude that the problems may originate from budget constraint and lack of skilled manpower in IT in adequate number.

Concerning data related challenges the grand means for lack of data integration, delay in data production, duplication and overlap of data, lack of feedback and inaccurate and incomplete data are rated as serious problems with mean values ranging from 3.68 to 3.88 and labeled as serious problems. This indicates that, most of the problems listed are considered as serious problems by many respondents at all levels of the educational level. Therefore, one can simply conclude that due emphasis is not given for EMIS unit and lack of human and material capacity such as assigning adequate qualified personnel, offering trainings and providing the necessary support can seriously affect this.

With regard to structure and manpower related challenges, the grand means for inadequate manpower, brain drain, lack of dedicated professionals, lack of clearly defined responsibilities and lack of shared vision/planning are rated as serious problems ranging from 3.62 to 3.98, where as lack of structure of the organization and high turn over rate are rated as moderately serious with grand means 2.95 and 2.85 respectively. This indicates that the above problems are considered as serious problems by many of the sample respondents except lack of structure of the organization and high turn over rate.

There fore, one can conclude that lack of shared vision may arise from resistance to adopting a culture of information use and less feeling of ownership on EMIS. So, without a shared vision, units and individuals are less likely to be proactive in the advancement of EMIS and are more likely to contribute less than best levels of effort and intention.

Furthermore, lack of clearly defined responsibilities for staff may result in certain functions being overlooked or neglected while at the same time other functions are performed by multiple individuals or units. On top of this, although common institutional problems (high turn-over rate, Brain drain, inadequate manpower etc) appear to be many and known to all, a systematic analysis of these problems and an institutional capability of identifying strategies for resolving these problems remain inadequate.

Moreover one-way ANOVA was employed to test if there was any discrepancy between the responses of the different groups. The result of ANOVA test and the associated P-values shows that except for item numbers (5, 6,14, 19 and 20), there were significant mean differences between the views of the group of respondents at 95% level of significance regarding the problems listed in the table which are considered to be impediments in the development of EMIS.

Furthermore, the post hoc tests show that there is significant mean difference between school and kebele regarding poor coordination; and leadership concerning lack of system and program monitoring and poor record keeping, the mean difference is observed between schools on one hand and kebele and sub-city on the other hand. Regarding lack of organizational readiness the mean difference lies between school and sub-city. In relation to data related challenges the post hoc with scheffe procedure indicates that the mean difference lies between school on one hand and kebele and sub-city on the other hand except in that of item number 9 in which the difference is only between school and sub-city. Concerning problems related to inadequate manpower, brain drain and lack of dedicated professionals, the mean values of schools is significantly lower than that of sub-city. Similarly, regarding lack of clearly defined responsibilities and lack of shared vision the post hoc indicates there is significant mean difference between schools and kebeles. On the other hand, problems related to lack of structure in the organization the post hoc shows the significant difference between school on one hand kebele and sub-city on the other hand.

The response of the interview conducted with the EMIS unit heads, region and sub-city education office heads and head of finance and economic development of Addis Ababa City Administration is presented as follows:

The aim of the interview is to assess challenges that impede the development of EMIS. Majority of the respondents described that shortages of inputs to expand EMIS for all sectors, lack of adequate experts in the area of EMIS, high turn-over rate, lack of computerization of data/ information in the region, lack of attention to EMIS by the concerned bodies, lack of continuous training on EMIS, are the most serious problems that hinder the development of EMIS.

Therefore, they recommended that expanding latest ICT technology at each and every level, providing training and incentive mechanisms, improving salary scale. Of the personnel in EMIS unit, fulfilling both human and non human resources and creating/ providing awareness raising program as possible solutions to alleviate the problems of EMIS.

Our experience shows us lack of culture of communication and information exchange, lack of shared vision for EMIS, lack of organizational readiness and a set of institutional issues common to most ministries that impede the development of EMIS (Hua & Herstein, 2003: 19). Besides, Tegegne (2003:59-60) explains that for an EMIS unit to produce more comprehensive and policy-oriented educational information, it demands facilities such as computers, highly trained professionals, sufficient budget, continuous training and commitment from decision-makers.

Thus, the Addis Ababa Education Bureau in collaboration with MoE and others education levels below as well as NGOs should provide different mechanisms such as continuous short term and long-term trainings, fulfilling the necessary logistics (facilities, computers), providing incentives (to reduce high turnover and brain-drain), allocate sufficient budget and by reducing data related challenges (lack of data integration, poor quality of data, duplication and overlap of data) , the problems that impede EMIS development will be reduced to the lowest degree.

4.2.4.2. Strategies to Upgrade EMIS Development

There are tremendous strategies to improve EMIS development. EMIS development should concentrate on data and information use and institutional behavior change for modern management (Hua & Herstein, 2003: 8).

The development of an Education Management Information System (EMIS) is essential in the modern management of education systems. It is designed to support information based decision-making process. Computer technology, data base tools and technical skills provide necessary assistance in the data and information production capacity for education system (Hua and Herstein, 2003: 25). Therefore, this section is designed to assess strategies to improve EMIS. The major strategies to improve EMIS are presented in the table below and respondents are asked to rate them as: **very high = 5, high= 4, Medium =3; Low = 2, and very low =1**. For the simplicity of the analysis, the mean values are classified as 3= highly needed, 2-3=partially needed, <2=not needed.

Table 11: Responses of respondents on strategies to improve EMIS development at different levels

No.	Strategies to improve EMIS development	School No=44		Kebele No=36		Sub-city No=30		Grand Mean	Comparing means One way- ANOVA	
		Mean	SD	Mean	SD	Mean	SD		F	Sig.
1	Training/education, skill upgrading	4.2	1.61	3.97	0.98	4.2	0.83	4.12	.792	.456
2	Develop incentive structures	3.22	1.59	3.86	1.03	4.13	0.85	3.74	.937	.395
3	Adequate budget allocation	2.8	1.71	3.78	1.11	4.26	0.58	3.61	1.208	.303
4	Good governance	4.2	0.84	4.06	0.99	3.93	1.15	4.06	.650	.524
5	Software development	4.11	0.88	4	1.05	3.83	1.49	3.98	1.521	.223
6	Data base development	3.61	1.35	3.58	1.36	3.73	1.57	3.64	.535	.587
7	Effective and maximum use of IT technology	3.75	1.35	3.25	1.69	3.63	1.64	3.54	.745	.477
8	Strong record keeping	3.5	1.32	3.69	1.08	3.6	1.62	3.60	.404	.669
9	Develop well-organized EMIS unit	3.48	1.48	3.64	1.27	3.96	1.38	3.69	.495	.611
10	Consistent political commitment and support	3.43	1.51	3.81	1.10	3.93	1.57	3.72	.523	.594
11	Shared vision/planning	3.89	1.11	3.89	0.89	3.93	1.57	3.90	.013	.987
12	Strong coordination and leadership	3.57	1.32	3.5	1.38	4.16	0.78	3.74	1.660	.195

(>3= Highly needed, 2-3=partially needed, <2=not needed)

According to the table above, the grand mean for all items rated above average with grand means ranging from 3.54 to 4.12. Therefore, they are considered as desired strategies by the sample respondents to improve EMIS development.

In addition to this, one way ANOVA was employed to test if there is any discrepancy between the groups of respondents on the strategies that improve EMIS development. The result of the ANOVA test and the associated P- values show that there is no significance difference among the groups of respondents (schools, kebeles and sub-city) for all items at 95% level of significance. Therefore, all the respondents confirmed that the strategies mentioned above are considerably vital to improve EMIS development such as, soft ware development, data base development, adequate budget allocation, good governance, commitment and training/education or skill up-grading etc. They are the most significant strategies to up-grade EMIS development.

In the interview question, respondents were asked to describe strategies that help to improve EMIS development and they responded that introducing latest IT technology, expansion of infra-structure development, and train qualified manpower in the area of EMIS, are the most significant strategies to improve EMIS development.

Thus, software development, adequate budget allocation, providing incentive structures, trainings, education or skill up-grading and effective and maximum use of IT technology are identified as strategies to improve EMIS development. Therefore, the Addis Ababa Education Bureau and the central EMIS unit under the MOE should design mechanisms to facilitate EMIS development in the city.

4.2.5 Analysis of the status of EMIS capacity

There are various ways for improving EMIS capacity throughout the education system. Improving the resource capacity, institutional capacity and electronic communication are among the significant ones to up grade EMIS capacity. Therefore, this section deals with EMIS capacity at school, kebele, and sub-city levels.

4.2.5.1 EMIS Capacity at School Level

EMIS capacity should be improved at school level so as to produce reliable, relevant, and timely information for different users of information at different levels of the education systems and other stakeholders outside the system. Therefore, this section is designed to assess to improve the capacity of EMIS at school level. The items are presented to be rated as: **very good = 5, good = 4, satisfactory =3; poor =2, very poor = 1**. For the simplicity of the analysis, the mean values are classified as (>3= highly needed, 2-3=partially needed, <2=not needed).

Table 12 A: Responses of Respondents on EMIS capacity at School level No. =44

No.	EMIS Capacity	Descriptive Statistics		One sample t-test Test value=3			
		Mean	SD	t	df	Sig(2-tailed)	Mean Diff.
1	<u>Improve Resource Capacity</u>						
	Number of persons assigned for statistical work	3.29	1.42	1.377	43	.176	.29545
	Adequacy of skills necessary for statistical work	3.45	1.50	2.008	43	.051	.45455
	Adequate salary relative to required work & qualification	3.68	1.54	2.943*	43	.005	.68182
	Material, facilities, and logistical support	3.82	1.11	4.910*	43	.000	.81818
	Recurrent cost budget for operations(e.g. Cost of conducting surveys)	3.75	1.12	4.429*	43	.000	.75000
	Capital investment in infrastructure and equipment	3.89	1.02	5.784*	43	.000	.88636
2	<u>Improve Institutional Capacity</u>						
	Quality of leadership, management, supervision of operations	3.86	1.13	5.057*	43	.000	.86364
	Administrative structures(e.g. no cooperation between departments	3.29	1.44	1.361	43	.181	.29545
	Working procedure and task management(e.g. work load distribution)	3.70	1.05	4.463*	43	.000	.70455
	Annual work plan and resource allocation	4.14	.82	9.150*	43	.000	1.13636
	Professional development opportunities and status of statisticians as professionals	3.41	1.44	1.890	43	.066	.40909
3	<u>Electronic Communication</u>						
	Communicating in Internet	2.98	1.32	-.114	43	.910	-.02273
	Internet web-based publication and information services	2.75	1.46	-1.132	43	.264	-.25000
	Designing Internet web pages	2.25	1.57	-3.165	43	.003	-.75000
	School records management	2.70	1.64	-1.198	43	.238	-.29545
	Data base design, development and maintenance	3.00	1.59	.000	43	1.000	.00000
	Survey management at school levels	2.82		-.703	43	.486	-.18182

(>3= highly needed, 2-3=partially needed, <2=not needed)

*p<0.05

As can be seen from the table above, strategies related to resource capacity such as number of persons assigned for statistical work, adequacy of skills, adequate salary, materials, facilities and logistical support, recurrent cost-budget and capital investment have mean values ranging from 3.29 to 3.89. This depicts that the above strategies are highly recommended as crucial strategies improve the resource capacity of EMIS.

With regard to institutional capacity, strategies related to quality of leadership, management, administrative structures, working procedure and task management, annual work plan and resources allocation, as well as professional development opportunities are rated above average with mean values ranging from 3.29 to 4.14. This shows that the above strategies are identified as significant factors that usually assist the improvement of EMIS institutional capacity. Therefore, they are recommended by majority of the sample respondents as institutional strategies to improve EMIS capacity.

Concerning electronic communication; communicating in internet, designing internet web pages, school records management, data base design, development and maintenance internet web-based publication and information, as well as survey management at school levels have mean values ranging from 2.25 to 3.00. This indicates that electronic communication is partially needed to improve EMIS capacity. Besides, one sample t-test procedure was employed to test whether the obtained scores for the variables differ from the specified constant value (3) for strategies that used to improve EMIS capacity at 95% confidence level. With regard to resource capacity, there is significant difference among all items except items for number of persons assigned for statistical work and adequacy of skills with t-value of 1.38, $p=.18$ and $t=2.01$, $p=.051$ respectively.

Concerning institutional capacity, the quality of leadership and management; working procedures and task management; and annual work plan are significantly higher ($t=5.06$, $p=.000$; $t=4.46$, $p=.000$; $t=9.15$, $p=.000$) than that of the expected test value (3). Moreover, regarding electronic communication, designing internet web pages is significantly lower needed ($t=-3.17$, $p=.003$) than that of the expected test value(3).

According to Cassidy (2005), considerable knowledge and skills are required to build, maintain and use EMIS. A lack of available human resource capacity significantly limits EMIS development. Building human resource capacity has long been known to a critical factor in the success of EMIS development.

4.2.5.2. EMIS capacity at Kebele and Sub-city level

Kebeles and sub-cities are administrative bodies which play significant roles in upgrading EMIS capacity. EMIS capacity should be improved at all levels of the education hierarchy of the Addis Ababa City Administration, if the necessary resources are fulfilled. Therefore, this section is intended to assess the strategies taken to improve EMIS capacity at different levels of Addis Ababa City Administration. The sample respondents were asked to be rated by five point scales as: **very high = 5, high = 4, Medium =3, Low = 2 and very low =1**. For the simplicity of the analysis, the mean values are classified as (>3= highly needed, 2-3=partially needed, <2=not needed).

Table 12 B: Responses of Respondents on EMIS capacity at kebele and sub-city level

No.	EMIS Capacity	Descriptive Statistics				Grand mean	Independent t-test			
		Kebele N=36		Sub-city No=30			t	df	Sig.(2-tailed)	Mean Diff.
		Mean	SD	Mean	SD					
1	<u>Improve Resource Capacity</u> Number of persons assigned for statistical work	3.94	1.04	4.27	.78	4.11	-1.397	64	.167	-.32222
	Adequacy of skills necessary for statistical work	4.14	.93	4.37	.85	4.26	-1.029	64	.307	-.22778
	Adequate salary relative to required work & qualification	4.06	.92	4.27	.87	4.17	-.950	64	.346	-.21111
	Material, facilities, and logistical support	3.86	1.09	4.23	.82	4.05	-1.534	64	.130	-.37222
	Recurrent cost budget for operations(e.g. Cost of conducting surveys)	3.92	1.13	3.70	1.21	3.81	.752	64	.455	.21667
	Capital investment in infrastructure and equipment	4.11	.78	3.80	1.10	3.95	1.341	64	.185	.31111
2	<u>Improve Institutional Capacity</u> Quality of leadership, management, supervision of operations	4.1	.82	4.20	.81	4.15	-.442	64	.660	-.08889
	Administrative structures(e.g. no cooperation between departments)	3.94	.79	4.03	.81	3.99	-.450	64	.654	-.8889
	Working procedure and task management(e.g. work load distribution)	4.08	.77	4.23	.73	4.16	-.808	64	.422	-.15000
	Annual work plan and resource allocation	3.94	.98	4.2	.81	4.07	-1.139	64	.259	-.25556
	Professional development opportunities and status of statisticians as professionals	3.86	1.05	4.23	.82	4.05	-1.586	64	.118	-.37222
	3	<u>Electronic Communication</u> Statistical publication through CD-ROM	3.78	1.09	3.6	1.191	3.69	.630	64	.531
Communicating in Internet		3.83	1.13	3.2	1.54	3.52	1.921	64	.059	.63333
Internet web-based publication and information services		3.25	1.38	3.13	1.63	3.19	.314	64	.754	.11667
Designing Internet web pages		3.31	1.41	3.1	1.60	3.21	.554	64	.582	.20556
School records management		3.67	1.04	3.67	1.09	3.67	.000	64	1.000	.00000
Data base design, development and maintenance		2.83	1.46	3.27	1.17	2.55	-1.308	64	.195	-.43333

(>3= highly needed, 2-3=partially needed, <2=not needed)

As depicted in the table, with respect to resource capacity, number of persons assigned for statistical work, adequacy of skills necessary for statistical work, adequate salary material, facilities and logistical support; recurrent cost budget for operations and capital investment have grand means ranging from 3.81 to 4.26. They are therefore, identified by sample respondents as significant factors to improve resource capacity of EMIS at kebele and sub-city level.

With regard to institutional capacity, quality of leadership, management, supervision of operations; administrative structures; working procedure and task management; Annual work plan, resource allocation and professional development opportunities have grand means ranging from 3.99 to 4.16. Thus, they are classified by sample respondents as very high and high strategies to improve EMIS capacity at all levels of the Addis Ababa City Administration.

Concerning electronic communication, statistical publication through CD-Rom, communicating in internet, internet web-based publication, designing internet web-pages, school records management have grand means ranging from 2.55 to 3.69. Therefore the above electronic communication is given sufficient consideration by the respondents at kebele and sub-city levels. On the other hand, data base design, development and maintenance have a grand mean value of 2.55. This implies that this item was rated below average. This implies that attention was not given to data base, design, development and maintenance at kebele and sub-city level.

Furthermore, independent t-test was employed to compare the mean differences between the kebele and sub-city respondents at 95% confidence level. Therefore, there is no significant mean difference between kebele and sub-city respondents concerning resource capacity, institutional capacity, and electronic communication.

In the interview question, the respondents were asked to list down what strategies should be taken to improve EMIS capacity and they explained that continuous training on EMIS and

awareness raising program on the usefulness of EMIS, assigning adequate qualified manpower, fulfilling the necessary inputs such as teaching materials, allocate adequate financial resources and using IT technology are strategies that can assist the improvement of EMIS.

EMIS is aimed to strengthen capacities in management, planning and dissemination of information at all levels of the education system for all areas of reflection and decision-making (Carrizo, Sauvageot and Bella, 2003:24).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 SUMMARY

This chapter presents summary of the major findings, the conclusion drawn from the findings, and the recommendations forwarded, that may help to improve the development of EMIS and its challenges in Addis Ababa City Administration. The main objectives of the study were to investigate the development of EMIS and to assess efforts made to improve the quality of data to support decision-making, monitoring and evaluation of the system, to examine the types of information produced for users and to identify the challenges that impede the development of EMIS.

The following basic questions were formulated in order to achieve the stated objectives and examine the shortcomings encountered in the development of EMIS:-

1. To what extent is EMIS demanded throughout the system of education?
2. What efforts should be made to improve EMIS capacity to support decision-making, monitoring and evaluation of the system?
3. What kind of information is produced for users?
4. What are the problems that impede the development of EMIS?

In order to address the basic questions, relevant and related literature was consulted. Descriptive survey was employed to assess the development of EMIS and its challenges. Schools and education offices at different levels were the primary sources of data/information. The secondary sources of data/information were education statistics abstracts, the Annual Education Census Questionnaire and documents prepared by EMIS unit at different levels. The respondents at school level were principals, vice-principals, and record officers. The respondents at kebele and sub-city level were data analyst and EMIS staff. The study was conducted in 14 primary and 8 secondary schools, 3 sub cities Education departments and 4 kebeles education offices. Sets of questionnaire were used to collect information from principals, vice-principals, and kebele education office head and data analyst as well as sub-city education department EMIS personnel.

The Heads of Addis Ababa Education Bureau and Finance and economic Development Office as well as the Addis Ababa Education Bureau EMIS staff were involved through interview. The investigator used simple random and availability sampling techniques to select sample respondents, schools, kebeles and sub-cities. Heads of Addis Ababa Education Bureau and Finance and Economic Development, and EMIS staff at education bureau, sub-city and kebele education office were selected on the basis of availability sampling technique. School principals, record officers were selected based on simple random sampling technique. Further more, Sub cities, kebeles and schools were selected based on simple random sampling technique.

In the study, extensive efforts were made to examine the situation from different directions so as to suggest possible solutions that may help for the development of EMIS. The data obtained from the sample respondents were analyzed and interpreted by using percentage and frequency distribution, mean, grand mean, standard deviation, t-test, rank order and one-way ANOVA.

5.1.1 Characteristics of the Respondents

The respondents of the study were principals, record-officers, data analyst, EMIS personnel at different levels of the education system, heads of Education bureau, sub-city education office and finance and economic development. Of these, 96 are males and the rest 40 are females. The questionnaire was distributed to 110 respondents. Of these, 105 respondents filled and returned the questionnaire. Consequently, the rate of return was 95.45percent. On the other hand, 4.55percent of the respondents did not return the questionnaire. This situation somehow affected the finding of the study. Characteristics of the respondents encompassed Sex, age, educational qualification, job experience and training received.

The major findings of the study are summarized as follows:

5.1.2. Major Findings of the Study

The major findings of the study are presented as follows:

5.1.2.1 Characteristics of the Respondents

a) Educational Level and Work Experience of Respondents

All the principals in the sample schools hold a college diploma and above. Therefore, the qualification of the principals is found to be satisfactory to the job. On the other hand, almost half of the record-officers at primary and secondary schools hold certificate. Therefore, the qualification of record-officers is found to be unsatisfactory to the job. Besides, more than 50% of the principals in the sample schools and 69.44% of respondents in the sample kebeles have below 5 years of experience in the current position. On the other hand, 84.03% of record-officers have more than 5 years of experience. This implies that record officers have better experience than school and kebeles respondents. Therefore, the experience of principals and kebele respondents is found to be unsatisfactory to the job.

The educational level of kebele and sub-city personnel is considerably high. More than, 66.67% of respondents in the sample kebele and 76.67% of respondents in the sample sub-cities have BA/BSC degree. The work experience of sub-city personnel is moderately low. More than 43.33% have below 5 years of experience. Therefore, the experience of personnel working in sample sub-cities is not adequate.

b). EMIS related trainings and the adequacy of salary

More than 60% of the sub-city and kebele respondents have confirmed that they had never got trainings related to EMIS. Besides, more than 75% of the respondents at all echelon of the educational hierarchy complained that their salary is not adequate compared to other similar jobs. The inadequacy is more serious at school level.

5.1.2.2 The EMIS Demanded by Education System

a) Types of Educational Information needed by Schools and other Organs

The school respondents rated the common types of educational information like learning achievement of children, students numbers and performance, repeaters and, personnel and teachers, school space and empowerment; and finance and materials as highly needed (with mean value >3), which implies that the aforementioned educational information's are given enough consideration by schools.

At kebele level and sub-city level the type of educational information related to teachers and personnel ,students, finance and materials, school space and environment are identified as extremely needed (with grand mean >3), which implies the above types of information are given due emphasis at kebele and sub-city level.

b). Degree of Educational Information Available

The common educational data/information mostly available at all levels are net and gross enrollment rate by grade and gender, student wastage, student attendance, student-teacher ratio, student-textbook ratio, unit cost per student, annual expenditure and revenue, teaching aids and teachers' guide, students' desk, teachers' employment and teachers' number. Information on administrative workers employment (transfer, turnover) is rarely available.

c) Problems facing in collecting annual education census

Missed information (not collected but relevant), poor quality of data collected, lack of training on how to collect the questionnaire, shortage of time to collect the questionnaire, lack of clear guidelines on how to collect the questionnaire are identified as a major problems at all levels of the educational hierarchy.

d) EMIS Functions performed by schools, kebeles, sub-cities

The school respondents rated the common functions like filling the annual education census questionnaire, collecting educational data, dissemination of data, and reporting timely to kebele and sub-city as usually performed (with mean value >3), which implies that the current status of EMIS is performing the aforementioned functions.

At kebele level, the main functions performed are compiling data, documenting and storing data, disseminating data to sub-city and reporting the data timely to sub-city, data processing, publishing reports, are rarely or never done. The main functions performed at sub-city level are compiling data, data analysis, documenting and storing data and dissemination and information to users.

5.1.2.3 The EMIS Produced for Users

a) Data/Information Users

At all levels, educational information is usually used by kebele education office for planning and budgeting, decision making, enrollment projection, policy making, monitoring and evaluation. Region education bureaus and sub-city education department as well as PTA used educational information next to kebele education office. On the other hand, NGOs and parents poorly used educational information for various purposes.

b) Forms and Dissemination of Educational information at different levels

The data/information prepared is stored or made available, at all levels mainly in type written files form. Computer files and hand written files are rarely used to store information. Furthermore, the data/information is disseminated at all levels to users mainly through hard copy and meetings (department, PTA). However, softcopy and web-pages are rarely used as information dissemination mechanisms.

c). Utilization of Educational Information

At different levels of the Addis Ababa City Administration the utilization of educational information for sound decision making; planning and budgeting; monitoring and evaluation; enrollment projection and project implementation are rated high (with grand mean >3) which implies the above functions are sufficiently exercised in Addis Ababa City Administration. On the other hand, the utilization of educational information for conducting studies is rated below average (with grand mean <3). This implies that due emphasis was not given to studies

5.1.2.4 Factors affecting the development of EMIS

a) Challenges in the development of EMIS

Poor coordination and leadership; poor record keeping, lack of shared vision/planning, budget constraint, brain drain, lack of clearly defined responsibilities, lack of data integration, lack of facilities and computer ,inaccurate and incomplete data, delay in data production, duplication and overlap of data, lack of feedback mechanism, lack of system and program monitoring and evaluation, difficulties in maintaining IT, unfair budget allocation are identified as serious challenges that impede the development of EMIS. On the other hand, lack of structure of the organization and high turnover rate are identified as moderately serious problems to EMIS development.

b) Strategies to upgrade EMIS development

At all levels, software development, adequate budget allocation, providing incentive structures, trainings and skill up-grading and; effective and maximum use of IT technology are identified as major strategies to upgrade EMIS development.

5.1.2.5 Efforts to improve the capacity of EMIS to support decision-making, Monitoring and Evaluation and Planning

a) Improve EMIS capacity at school, kebele and sub-city level

At all levels, majority of the respondents confirmed that improving resources capacity (such as number of persons assigned for statistical work, adequacy of skills, adequate salary, materials, facilities and logistical support, recurrent cost budget for operations and capital investment in infrastructure and equipment); institutional capacity (such as quality of leadership and management, administrative structures, working procedure, resources allocation); electronic communication (such as communicating in internet, internet web-based publication and information services, school records management, data base design, development and maintenance) are identified as strategies to improve EMIS capacity at all levels of the education hierarchy of Addis Ababa City Administration.

5.2. Conclusions

The following conclusions are drawn from the findings of the study:

1. It is obvious that EMIS is demanded through out the education system by users for various purposes. Planners, decision-makers, policy analysts, educators at different levels, stakeholders, NGOs, etc. need relevant, reliable, complete and timely data/information that satisfy their needs. However, it was found that the EMIS in Addis Ababa City Administration can be described as poor in terms of quality and timeliness of data, as well as human and material resources. At all levels, the assignment of personnel in EMIS units does not consider the subject of specialization. Besides, the reliability of data/information collected through Annual Education Census Questionnaire seems to be questionable. Like wise, at all levels, the storage and dissemination of data/information did not utilize new technologies such as computers. It is made available to users in type written file form. Therefore, the written files may be damaged, faded, or lost. This in turn creates difficulty in keeping educational information for a long period of time. Thus, one can conclude that the EMIS in Addis Ababa city Administration Education Bureau may not able to satisfy the demand of users and suffer from poor quality of data. The EMIS personnel also lack the knowledge and skills to use technology. So, the EMIS may not serve the users by providing reliable, relevant, timely and complete data as expected. The above conditions can affect the quality of information provided for users and the development of EMIS.
2. Types of educational information should be available in adequate amount and in different forms for users. It was found that, at all levels, types of educational information produced for users such as students' enrollment, number, performance, drop-out and repetition rate; teachers numbers and performance by grade and subjects, information on class size and school space as well as financial and material resources are mostly available at all levels. However, important information such as reasons for drop-out and repetition rate, the status of different types of expenditure, gender disparity are rarely found or not available totally. Thus, the types of information provided for users can be considered as inadequate to be used for accomplishing activities designed to improve EMIS and the teaching-learning process.

3. The development of an educational management information system (EMIS) is essential in the modern management of education system. It is designed to support information based decision making process, computer technology, data based tools and technical skills provide necessary assistance in the data and information production capacity for education system. However, the finding indicates that there are various problems that impede the development of EMIS such as lack of shared vision, poor coordination of leadership, budget constraint, lack of data integration, lack of logistics and facilities, inaccurate and incomplete data, delay in data production, lack of clearly defined responsibilities, lack of feedback mechanism, lack of system and program monitoring and evaluation and difficulties in maintaining IT. Therefore, these problems can seriously affect the development of EMIS and quality of data provided for supporting decision-making, planning, policy-making and management.
4. EMIS capacity should be improved at all levels of the educational hierarchy. As the finding described, there are strategies to improve the capacity of EMIS. These include the resource capacity (such as persons assigned for statistical work, adequacy of skills, adequate salary; materials, facilities and logistical support as well as recurrent cost budget); institutional capacity (such as quality of leadership and management, administrative structures, resources allocation); and electronic communication such as (communication in internet, web-based publication and information services). However, it was found that at all levels around three-fourth of the EMIS personnel work without having any type of trainings related to the profession of EMIS job. Similarly, majority of the personnel working in the units have complaint on the adequacy of their salary compared to other similar positions. Thus, majority of the respondents did not get the opportunity to improve their knowledge and skills related to EMIS through in service and pre-service trainings. This inhibits personnel to perform their tasks below the expected and unsatisfactorily which later on might leads to high personnel turn over. Likewise, the EMIS in Addis Ababa City Administration does not use modern technologies like web-pages, soft copy, internet etc. This might affect the dissemination of data to users.

5.3. Recommendations

Based on the findings and the conclusion drawn, the following recommendations are forwarded to alleviate the challenges faced by EMIS

1. Currently, Ethiopia is committed to achieve the millennium developmental goals (MDGs) by 2015. To achieve these goals, relevant, complete, reliable, and timely data/ information is vital. However, in the finding it was found that the EMIS in Addis Ababa City Administration can be described as poor in terms of quality and timeliness, as well as human and material resources. At all levels, the assignment of personnel in EMIS units does not consider the subject of specialization. Besides, Education Statistics reports cannot provide all the information for all users for obvious reasons. The reliability of data/information collected through Annual Education Census Questionnaire seems to be questionable because it encounters various problems such as missed information (relevant but not collected), poor quality of data, lack of orientation and clear guide lines on how to collect the questionnaire and shortage of time to collect the questionnaire. On top of this, at all levels, the storage and dissemination of data/information did not utilize new technologies such as computers. It is made available to users in type written files form. Currently, the Education Annual Abstract, Publications of the MoE and the Addis Ababa City Administration Education Bureau are at present serving as basic sources of information about the progress of the education system. Besides, short-term and long term trainings should be provided for EMIS personnel and also educational information ought to be provided in different forms (soft copy, web-pages, CD-RW, flash disk) to users. Therefore, at all levels, depending on the education hierarchy, to build an EMIS that meets the real needs of users, studies need to be undertaken to supply with the information demands of all those are involved in this effort. Likewise, manuals that guide how to collect educational information and how to utilize for planning, policy making, and decision making should be prepared. By conducting studies, assessing international experiences, and collaborating with development partners, the publication has to be refined in order to satisfy the information needs of the users.

2. The development of a comprehensive, integrated computer-based EMIS requires the involvement, cooperation and participation of many people working at all levels in the education system, as well as people in other government. It was found that at all levels, types of educational information produced are mostly available at all levels. However, important information such as reasons for drop-out and repetition rate, the status of different types of expenditure, gender disparity are rarely found or not available totally. Thus, the types of information provided for users can be considered as inadequate to be used for accomplishing activities designed to improve EMIS. Therefore, the Addis Ababa City Administration Education Bureau and the various levels below should create mechanisms to provide different kinds of information by considering the interests of the users into account and should provide discussion forums with different stakeholders and gather information. Besides, it should identify data and information needs. This includes input from policy-makers, researchers, donor partners, NGOs, government agencies, etc.
- 3) As the finding indicated, there are problems that hinder the development of EMIS in Addis Ababa City Administration. It is obvious that the development is slow in Addis Ababa. However, there are improvements on the development of EMIS in Addis Ababa city Administration from time to time in different aspects. It has significantly improved its annual school census and computerizing of some important administrative functions as well as number of copies distributed. On top of this, it has taken significant steps to make data more accessible to users from time to time. More EMIS efforts have failed because of the unavailability of good personnel and commitment. Most of the problems are related to administrative/procedure, financial and material resources, structure and manpower and data production. Organizations with unclear lines of accountability, with redundant or non-existent responsibility assignments, and with poor coordination and leadership and lack of feedback mechanism hinder EMIS development. To tackle these problems, at all levels, steps should be taken to improve EMIS development such as software development, adequate budget allocation, providing incentive structures, trainings / skill up-grading and; commitment (own the change, good will of employees, providing material and financial support), good governance, effective and maximum use of IT technology. Therefore, it is necessary to construct EMIS that is more

comprehensive and better focused on the educational objectives of the country step by step. In order to achieve this, the Addis Ababa Education Bureau EMIS unit should endeavor to work together closely with stakeholders and establish frequent communication with the central EMIS, sub-cities, kebele and schools.

4. Considerable knowledge and skills are required to build, maintain and use an EMIS. A lack of available human resource capacity significantly limits EMIS development. Limited capacity for more effective use of data in management and decision-making, particularly at the kebele and school levels is often mentioned. As the finding described, there are strategies to improve the capacity of EMIS. These include the resource capacity, institutional capacity, and electronic communication. However, it was found that at all levels around three-fourth of the EMIS personnel work without having any type of trainings related to the profession of EMIS job. Majority of the personnel working in the units have complaint on the adequacy of their salary, compared to other similar positions. Therefore, continuous training need to be conducted by resourceful individuals to EMIS personnel at each level of the educational hierarchy of the Addis Ababa city administration by taking the available resources, the present technology and the context of the country into consideration. Besides, it is also equally important to monitor the effectiveness of the trainings given to the lower levels of EMIS. Similarly, the central EMIS should design a plan to develop the capacity of kebeles and equip them with the necessary materials to make direct contact with them. Creating direct contact with kebeles facilitates the task of EMIS by shortening the hierarchy. The materials needed can be obtained by collaborating with development partners who are working in the area of education. Besides, officials at different levels of the Addis Ababa City Administration have to consider the use of internet and intranet in the development of EMIS. Besides, strengthening the Woreda net, which is already in place, is crucial to improve quality of data/ information. This can be achieved by collaborating the Addis Ababa City administration education bureau with stakeholders, NGOs and development partners of the education system.

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Appendix I

Sampling frame for the sub-cities

Sub-city code	List of sub-cities found in Addis Ababa	No of complete government primary schools	No of government secondary schools	No of government primary schools on sample sub-cities	No of government secondary schools on sample sub-cities	No sampled schools from sampled sub-cities
001	Addis Ketema	9	4	6	3	9
002	Akaki-Kaliti	12	5	-	-	-
003	Arada*	7	3	4	3	7
004	Bole	10	3	-	-	-
005	Gullelie	11	5	-	-	-
006	Kirkos	10	4	-	-	-
007	Kolfe Keranio	17	4	-	-	-
008	Lideta*	7	3	4	2	6
009	Nifas Silk Lafto	10	4	-	-	-
010	Yeka	13	5	-	-	-

Source- For number of schools Educational Statistics of Addis Ababa City Administration of 2008

* Represents the sampled sub-cities

በኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፑብሊክ
የትምህርት ሚኒስቴር

ዓመታዊ የትምህርት ስታትስቲክስ መሰብሰቢያ መጠየቅ
የአንደኛ ደረጃ ትምህርት ቤት
የትምህርት ዘመን 1993

I. ስለ ትምህርት ቤቱ መግለጫ

1.1 የትምህርት ቤቱ ስም ዩናይትድ ስኬት 1.2 የትምህርት ቤቱ መለያ ኮድ

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1.3 ትምህርት ቤቱ የሰዎች ለውጥ አድርጎ ከሆነ በፊት ያጠራበት የነበረው ስም

1.4 ትምህርት ቤቱ የተቋቋመበት ዘመን

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1.5 የሚገኝበት አካባቢ
ክልል ጅሁን
ዞን ቀርቆስ
መረጃ/ክፍለ ከተማ

1.6 የሚገኝበት ቦታ 1ጠር ☐ የከተማው ስም ☐
የገጠር ቀበሌ ስም ጅሁን ከተማ
የቀበሌ ስም 02/03
ስልክ ቁ.

0	1	1	4	1	6	2	6	5	6
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1.7 አድራሻ ፖ.ሣ.ቁ.

II. መረጃውን የምላውና ያረጋገጠው አካል

2.1 መረጃውን የምላው ስም አሰሪ: ደ.ገብረ ኃላፊነት
ፊርማ ቀን

0	5
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0	8
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7	8
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2.2 ትክክለኛነትን የረጋገጠው ኃላፊ ስም ኃላፊነት
ፊርማ ቀን

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2.3 ትክክለኛነትን የረጋገጠው የወረደ/የክፍለ ከተማ የትምህርት ቢሮ ስም ኃላፊነት
ፊርማ ቀን

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2.4 ትክክለኛነትን የረጋገጠው የዞን ትምህርት ባለሙያ ስም ኃላፊነት
ፊርማ ቀን

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የትምህርት ቤት ማህተም

የወረደ ትምህርት ጽ/ ቤት ማህተም

የዞን ትምህርት ደሰክ ማህተም

ከተማ ግለት ከግዕዝነት ስታትስቲክስ ባለሙያዎች ከተማ ተብለው የተሰየሙ ናቸው (መረጃው ከትምህርት ቢሮ ፐላን ክፍል ይገኛል)

III. ማጠቃለያ

ጠቅላላ የተማሪዎች ብዛት (መደበኛ እና የማታ)			የደጋግሚ ተማሪዎች ብዛት			አቅርጠው የተመለሱ ተማሪዎች ብዛት			የሌክሽን ብዛት
ወ	ሴ	ድምር	ወ	ሴ	ድምር	ወ	ሴ	ድምር	
ከፍል	—	—	—	—	—	—	—	—	—
ከፍል	—	—	—	—	—	—	—	—	—
ከፍል	—	—	—	—	—	—	—	—	—
ከፍል	—	—	—	—	—	—	—	—	—
ከፍል	1	1	2	—	—	—	—	—	1
ከፍል	1	3	4	—	—	—	—	—	1
ከፍል	8	5	13	—	—	—	—	—	1
ከፍል	10	6	16	—	—	—	—	—	1
ዎር	20	15	35	—	—	—	—	—	4
ጠቅላላ የአስተማሪዎች ብዛት			ወ	8	ሴ	1	ድምር	9	
ጠቅላላ የመማሪያ ክፍል ብዛት									

IV. በትምህርት ቤት የሚገኙ ልዩ ልዩ የትምህርት መስጫ ክፍሎችና የህንጻ ሁኔታ

ህንጻ ቁጥር	A.1							A.2		A.3		A.4		A.5		A.6		A.7		A.8		A.9		A.10		A.11						
	የሚሰጠው አገልግሎት (ከአንድ በላይ የሚሰጥ ከሆነ በተጨማሪ መምረጥ ይቻላል)							የህንጻው ግንባታ የተጠናቀቀበት ዓመት		በህንጻው ያሉ ክፍሎች ብዛት		ግድግዳው የተሠራበት		የግድግዳው ሁኔታ		የጣሪያው ዓይነት		የጣሪያው ሁኔታ		የወለሉ ዓይነት		የወለሉ ሁኔታ		በርና መስኮት የሌላቸው ብዛት		የግንዘብ ምንጭ						
	የመማሪያ ክፍል	ቤተመጻህፍት	ቢሮ	የፕሮግራም ማዕከል	የመምህራን ማረፊያ	ዕቃ ግምገማ ቤት	መስላሰቢያ አዳሪሽ	ሌላ	ድንጋጌ፡ ጡብ፡ ብሎክት	አንጨት	ጭቃ	ሌላ	ጥሩ/ተቀበያኝነት ያለው	ጥሩ ያልሆነ	ቆርቆሮ	ሳር	ሌላ	ጥሩ/ተቀበያኝነት ያለው	ጥሩ ያልሆነ	ቢሚንት	አፈር	ሌላ	ጥሩ/ተቀበያኝነት ያለው	ጥሩ ያልሆነ	የመስኮት መዝጊያ	የቦር መዝጊያ	መንግሥት	የህዝብ	የግል(መያዣ፣ ቤተክህነት)	የልማት አጋሮች	ሌላ	
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ተጨማሪ አስተያየት:

[illegible]

(8) 15
 $\sin A = 1, 25$
 $\sin A = 2$

V/. የመምህራንና የአስተዳደር ሠራተኞች መረጃ

№	1	2	3	4		5	6		7	8	9	10	11		12	13		14	15	16	17		18	19	20	21	22	
	ስም	የአባት ስም	የአያት ስም	ጾታ		የጋብቻ ሁኔታ (1)	ዜግነት		የትውልድ ዘመን	የትምህርት ዘመን	በመምህርነት የትምህርት ዘመን	በዝውውር ወደዚህ ትምህርት የመጡበት	መምህር	አስተዳደር	የትምህርት ሁኔታ	የትምህርት ቦታ	መምህሩ የሚያስተምርበት አጠቃላይ ክፍለ ጊዜ (ፔሪድ)		በአምነት የሚያስተምርበት ክፍለጊዜ ብዛት	አስተዳደራዊ የሥራ ድርሻ (2)	የትምህርት ደረጃ (3)	የሰለጠነበት የትምህርት ዓመታት		የመምህርነት መቶ አመት (5)	ለልዩ ፍላጎት ትምህርት ስልጣን ያለ?	የደመወዝ ስኬት (6)	ጥዕና (7)	የተደራገደበት ሳይክላት (ተፈላጊነት) ወይም 2ኛ ሳይክላት (8)
				ወንድ	ሴት		አንድ ፍቅር	የውጪ ዜግ									1ኛ ሳይክላት (1-4)	2ኛ ሳይክላት (5-8)				ዓ.ያ	ጊዜ					
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	ስም	የአባት ስም	የአያት ስም	ወንድ ሴት	የጋብቻ ሁኔታ (1)	አባት ድምር የውርድ ዜግ	የትውልድ ዘመን	የትምህርት ዘመን	በመምህርነት የትምህርት ዘመን	በዝውውር ወደዚህ ትምህርት የመጡበት	መምህር አስተዳደር ድምር	የትምህርት ሁኔታ	መምህር የሚያስተምርበት ክፍል/ክፍል (፳፭)	1ኛ ሳይክል (1-4)	2ኛ ሳይክል (5-8)	በሳምንት የሚያስተምርበት ክፍል/ክፍል	አስተዳደር ድምር የሥራ ድርጅት (2)	የትምህርት ደረጃ (3)	ዐቢይ ግዕዝ	የመምህርነት መያዝ (5)	ሰነድ ፍላጎት ትምህርት ስልጣን (6)	የደመወዝ ሰነድ (6)	ግዕዝ (7)	የትምህርት ሰነድ (10ኛ ዓ.ም. 2ኛ ሳይክል) (8)
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VI. የመምህራንና የአስተዳደር ሠራተኞች መረጃ

N°	1	2	3	4		5	6		7	8	9	10	11	12	13		14	15	16	17		18	19	20	21	22
	ስም	የአባት ስም	የእያት ስም	ጾታ		የጋብቻ ሁኔታ (1)	ዜግነት						የምሥራ ድርሻ	የትምህርት ሁኔታ	መምህራን የጥያቄ ስተምር በት አጠቃላይ ክፍለ ጊዜ (ፔሪድ)		በአምንት የጥያቄ ስተምር በት ክፍለ ጊዜ ብዛት	አስተዳደራዊ የምሥራ ድርሻ (2)	የትምህርት ደረጃ (3)	የሰለጠነ በት የትምህርት		የመምህርነት ሙያ ስልጠና (5)	ስልክ ፍላጎት ትምህርት ስልጣን ያለው?	የደመወዝ ስኬል (6)	ጣሪ (7)	የተጠሪ በት ሳይካል (1 እና 2) ወይም 2 እና 3 ካል (3)
				ወንድ	ሴት		አንድ ልጅ	ሁለት							የጋብቻ ሁኔታ (1)	የጋብቻ ሁኔታ (1)				የጋብቻ ሁኔታ (1)	የጋብቻ ሁኔታ (1)					
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	ስም	የአባት ስም	የእያት ስም	ጾታ		የግብርና ስም (1)	ዜግነት		የትምህርት ደረጃ	የትምህርት ዘመን	በመምህርነት የትምህርት ዘመን	በጥያቄው ስም	የመኖሪያ አድራሻ	የትምህርት ዓመት	የትምህርት ዓመት	መምህራን የጥያቄ ስም (1-4)		በሰነዱ ስም	የትምህርት ዓመት (2)	የትምህርት ዓመት (3)	የትምህርት ዓመት (4)		የትምህርት ዓመት (5)	የትምህርት ዓመት (6)	የትምህርት ዓመት (7)	የትምህርት ዓመት (8)
				ወንድ	ሴት		ወንድ	ሴት								ወንድ	ሴት				ወንድ	ሴት				
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VI/. ባለፈው ዓመት የለቀቁ መምህራን ብዛት

	ዝውውር	ሞት	ሀመም	ጡረታ	ሥራ መልቀቅ	ሥልጠና ላይ	ሌላ
ወንድ							
ሴት							

VII/. አዲስ ገቢ ተማሪዎች በዕድሜና በጾታ

7.1 ከአጸደ ሕፃናት የመጡ ተማሪዎች

ወንድ	ሴት

7.2 አንደኛ ክፍል አዲስ ገቢዎች በዕድሜና በጾታ

ዕድሜ	ከ6 ዓመት በታች	6 ዓመት	7 ዓመት	8 ዓመት	9 ዓመት	ከ9 ዓመት በላይ	ጠቅላላ ድምር
ወንድ							
ሴት							

7.3 ከአማራጭ መሠረታዊ ትምህርት ወደ 5ኛ ክፍል የመጡ ተማሪዎች በዕድሜና በጾታ

ዕድሜ	ከ6 ዓመት በታች	6 ዓመት	7 ዓመት	8 ዓመት	9 ዓመት	ከ9 ዓመት በላይ	ጠቅላላ ድምር
ወንድ							
ሴት							

VIII/. የተማሪዎች ብዛት /የማታ/

የክፍል ደረጃ	1ኛ ክፍል		2ኛ ክፍል		3ኛ ክፍል		4ኛ ክፍል		1ኛ-4ኛ ክፍል (ድምር)			5ኛ ክፍል		6ኛ ክፍል		7ኛ ክፍል		8ኛ ክፍል		5ኛ-8ኛ ክፍል (ድምር)			1ኛ-8ኛ ክፍል (ድምር)		
የሴክሽን ብዛት																									
የማታ ተማሪዎች በዕድሜ	ወ	ሴ	ወ	ሴ	ወ	ሴ	ወ	ሴ	ወ	ሴ	ድ	ወ	ሴ	ወ	ሴ	ወ	ሴ	ወ	ሴ	ወ	ሴ	ድ	ወ	ሴ	ድ
ከ6 ዓመት በታች																									
6 ዓመት																									
7 ዓመት																									
8 ዓመት																									
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16 ዓመት																									
ከ16 ዓመት በላይ																									
ድምር																									

IX/ጠቅላላ የመደበኛ ተማሪዎች ብዛት (በሁሉም የማስተማሪያ ቋንቋዎች)

የክፍል ደረጃ		1ኛ ክፍል	2ኛ ክፍል	3ኛ ክፍል	4ኛ ክፍል	1ኛ- 4ኛ ክፍል (ጽምር)	5ኛ ክፍል	6ኛ ክፍል	7ኛ ክፍል	8ኛ ክፍል	5ኛ- 8ኛ ክፍል (ጽምር)	1ኛ- 8ኛ ክፍል (ጽምር)					
የሲክሽን ብዛት							1	1	1	1							
የክፍሉ አጠቃቀም ዓይነት	መ-ሰ ቀን/ሰዓት ሊረታ	☐	☐	☐	☐		☒	☒	☒	☒							
	ዕለት ሊረታ	☐	☐	☐	☐		☐	☐	☐	☐							
	ፕሮግራም ክፍል	☐	☐	☐	☐		☐	☐	☐	☐							
ጠቅላላ የተማሪዎች ብዛት (ደጋግሞ ካገኘህት የተመለሱትን ይጨምራል)	ፅድቂ	ወ	ሴ	ወ	ሴ	ወ	ሴ	ድ	ወ	ሴ	ወ	ሴ	ድ	ወ	ሴ	ድ	
	ከ6 ዓመት በታች																
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	7 ዓመት																
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	9 ዓመት																
	10 ዓመት							1					1				
	11 ዓመት							1	2	4			2	3	5		
	12 ዓመት								1	2	1		3	3	6		
	13 ዓመት									2	1		2	3	5		
	14 ዓመት									3	1		8	2	10		
	15 ዓመት										2	4	2	4	6		
	16 ዓመት										2		2		2		
ከ16 ዓመት በላይ														5			
ጽምር							1	1	1	3	8	5	10	6	20	15	35
አጠቃላይ የደገው ተማሪዎች ብዛት																	
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ማየት የተሳናቸው																	
የእጅ የእግርና የእንቅስቃሴ ችግር ያለባቸው																	
መናገርና መስማት የተሳናቸው																	
የአእምሮ ሽግግር ያለባቸው																	
ሌላ																	
ወላጅ አልባ የሆኑ ተማሪዎች ብዛት																	

ጂ.ጠቅላላ የመደበኛ ተማሪዎች ብዛት (በሌላ የማስተማሪያ ቋንቋ)

የማስተማሪያው ቋንቋ

የክፍል ደረጃ		1ኛ ክፍል	2ኛ ክፍል	3ኛ ክፍል	4ኛ ክፍል	1ኛ-4ኛ ክፍል (ጽምር)	5ኛ ክፍል	6ኛ ክፍል	7ኛ ክፍል	8ኛ ክፍል	5ኛ-8ኛ ክፍል (ጽምር)	1ኛ-8ኛ ክፍል (ጽምር)	
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የክፍሉ አጠቃቀም ዓይነት	መሉ ተገ/አገድ ሊረቃ	☐	☐	☐	☐		☐	☐	☐	☐			
	ሁለት ሊረቃ	☐	☐	☐	☐		☐	☐	☐	☐			
	ጥምር ክፍል	☐	☐	☐	☐		☐	☐	☐	☐			
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	ከ6 ዓመት በታች												
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አጠቃላይ የደገመ ተማሪዎች ቁጥር													
ከ17 ዓመት በላይ አቋርጠው የተመለሱ ተማሪዎች ቁጥር													
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Addis Ababa University

College of Education

Department of Educational Planning and Management

Questionnaire to be filled by School Principals and Vice- Principals

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 information on EMIS development and challenges. The findings could be used for planning and improving the system of education in the city. Hence, the success of the study will depend on the quality of your responses. Therefore, you are kindly requested to give accurate and honest information timely to the items presented. Your response will be kept confidential and used only for academic purpose.

Note that:

1. No need of writing your name
2. Please put "X" marks or '√' tick in the box provided where alternatives are given.
3. For open ended questions, you are kindly requested to give short and precise answer on the space provided,
4. Your fast response will contribute to the successful completion of the research

Part I. Personal Information

1. Sub-City name----- Kebele----- school -----

2. School level- put tick mark "X" or '√' in appropriate box

1-4 ☐ 5-8 ☐ 1-8 ☐ 9-10 ☐ 9-12 ☐

Other-----

3. Job experience (in years),

----- Years in teaching

----- Years in Principal Ship

If other, please specify-----

4. Educational qualification,

- | | |
|--|---|
| ☐ TTI Certified | ☐ Diploma graduate |
| ☐ First-degree Graduate | ☐ Second degree graduate |

. If other, Please Specify-----

5. Specialization-----

6. Training received relevant to the post (short-term)

Part II. Educational Management Information(EMI) Need and Availability

2.1 Types of educational information needed by School and other Organs

In your opinion to what extent the following list of information are needed at school and system of education? **5- Very high; 4- high; 3- medium; 2-Low; 1- very Low**

No.	Types of educational information needed	Rating Scale				
		5	4	3	2	1
2.1.1	<u>Student related information</u>					
	2.1.1.1 Information on learning achievement of children by subject, grade					
	2.1.1.2 Information on student numbers, performance/ achievement Level by class/grade, sex, age etc					
	2.1.1.3 Information on repeaters by grade, sex and age					
	2.1.1.4 Information on students drop-out by grade, sex, and age					
2.1.2	<u>Personnel and teachers related information</u>					
	2.1.2.1. Information on supervisors report					
	2.1.2.2 Information on teachers numbers by subjects ,qualification, experience, sex, age					
	2.1.2.3 Information on number of supporting staff by sex, qualification, experience, age					
	2.1.2.3 Information on teacher's performance rating					
2.1.3	<u>School Space and environment related Information</u>					
	2.1.3.1. Information on class size					
	2.2.3.2. Information on school sections					
2.1.4	<u>Finance and materials related Information</u>					
	2.1.4.1. Information on financial resources					
	2.1.4.2 Information on utilization of teaching materials					
	2.1.4.3 Information on students text-book					

2.1.5 If any, please specify here-----

2.2 Degree of Educational Information Available

To what extent the following information are available in your school? Put in its degree of availability. Rates as – 5-Very high, 4-High, 3-Medium, 2-Low, 1-Very low

No	Data / Information	Degree of availability				
		5	4	3	2	1
2.2.1	<u>Personnel and Teacher</u>					
	2.2.1.1 Teacher employment (transfer, turnover)					
	2.2.1.2 Administrative workers employment(transfer, turn over)					
	2.2.1.3 Teachers number by subjects ,qualification, experience, sex, age					
2.2.2	<u>Student</u>					
	2.2.2.1 Net enrolment rate by grade and gender					
	2.2.2.2 Gross enrolment rate by grade and gender					
	2.2.2.3 Student wastage by grade /gender					
	2.2.2.4 Enrolment by grade / gender					
	2.2.2.5 Student attendance / discipline					
	2.2.2.6 Student-teacher ratio by grade and gender					
	2.2.2.7 Student-text book ratio by grade and gender					
2.2.3	<u>Finance</u>					
	2.2.3.1 School Annual Expenditure budget by type					
	2.2.3.2 Annual revenue budget by source of income					
	2.2.3.3 Unit cost per student					
2.2.4	<u>Educational Facilities and Materials</u>					
	2.2.4.1 Teacher's Guide by grade					
	2.2.4.2 Teaching aids by subjects, grade					
	2.2.4.3 Students' text-book by grade, subjects					
	2.2.4.4 Students' desk					
	2.2.4.5 Teachers' educational materials and goods (black board, shelf, tables, chairs, computer, calculator, type writer etc)					
	2.2.4.6 Latrine, sport field, adequate water, Library, Laboratory, Plasma					

2.2.5. If any, please specify here-----

2.2.6 In your opinion what is the reason for the unavailability of some educational information in your school? -----

2.3. Utilization of Educational Information

To what extent the following educational information are demanded or used in the school?
Please rate them by using the numbers indicated below. **Very high (5), High (4), Medium (3), Low (2), Very low (1)**

No.	Purposes for which educational information is demanded/used	5	4	3	2	1
2.3.1	Sound decision- making					
2.3.2	School planning and budgeting					
2.3.3	Evaluating the functioning of the school					
2.3.4	Monitoring the ongoing process of the school					
2.3.5	Enrolment projection					
2.3.6	Policy making					
2.3.7	Conducting studies					
2.3.8	Project implementation					

2.3.9. If any other, please specify here-----

----- 2.3.10. Is demand of information satisfactory? If not, please indicate the major problems

2.4 Problems facing in collecting Annual Education census

Listed below are problems encountered in collecting the annual education census questionnaire.
Which ones have you encountered in your school? Please rate them as: **5- Very serious; 4- Serious; 3- Partially serious; 2-Less serious; 1- Not a problem**

No	Problems encountered in collecting the AEC Questionnaire	5	4	3	2	1
2.4.1	Missed Information (not collected but relevant)					
2.4.2	Poor Quality of data collected (reliable, relevant and timeliness)					
2.4.3	Lack of training on how to collect the questionnaire					
2.4.4	Shortage of time to collect the questionnaire					
2.4.5	Lack of clear guide-lines to collect data					

2.4.6. If any other problem, please specify here-----

2.4.7. What steps should be taken to improve collecting Annual Education Census-----

Part III EMIS FUNCTIONING

3.1 Degree of EMIS Functions

To what extent the following EMIS functions are performed in the school? Put "X" mark in the box as: 5= Very good; 4=Good; 3= Satisfactory; 2= Poor; 1= Very poor

No	Purposes	Performance Degree				
		4	3	2	1	0
3.1.1	Filling the AEC questionnaire					
3.1.2	Collecting educational data					
3.1.3	Documenting and storing data					
3.1.4	Dissemination of data					
3.1.5	Reporting timely					

3.1.6. If others, please specify; -----

3.1.7. What strategies should be taken to upgrade EMIS functions at school level-----

3.2 Forms and Dissemination of Educational Information

To what extent educational information used by school, supplied to upper echelon and other organs are organized and disseminated? **Rank them**

Rate as Very high-5, High-4, Medium-3, Low-2, Very low-1

No.	Forms and Dissemination of educational information	Rank
3.2.1	<u>Forms of educational Information</u>	
	3.2.1.1 Computer file	
	3.2.1.2 Removable disks (floppy, flash, CD-Rom)	
	3.2.1.3 Type written paper files	
	3.2.1.4 Hand written paper files	
3.2.2	<u>Dissemination of educational information through</u>	
	3.2.2.1 Web-pages	
	3.2.2.2 Electronically(soft copy)	
	3.2.2.3 Hard copy and Meetings(staff, PTA& others)	

3.2.3. If any form, please specify here-----

3.2.4. What mechanisms should be applied to organize and disseminate of educational information?-----

3.3 Data/information Users

Who uses the data or information generated by your school? Rank them.

No	Body that uses of data/information	Rank
3.3.1	Kebele Education Office	
3.3.2	PTA	
3.3.3	Decision-makers	
3.3.4	Policy-makers	
3.3.5	Sub- city Education Department	
3.3.6	Regional Education Bureau	
3.3.7	Kebele cabinet	
3.3.8	NGOs	
3.3.9	Administrative bodies	
3.3.10	Other Kebele offices	
3.3.11	Parents and communities	

3.3.12. If other, please specify-----

3.3.13. What aspects of the information generated by school should be improved?-----

3.4 Improve EMIS Capacity

In your opinion, what strategies should be taken to improve EMIS capacity at school level?

Please rate them as: **Very high (5), High (4), Medium (3), Low (2), Very low (1)**

No.	EMIS Capacity	5	4	3	2	1
3.4.1	<u>Improve Resource Capacity</u>					
	Number of persons assigned for statistical work					
	Adequacy of skills necessary for statistical work					
	Adequate salary relative to required work & qualification					
	Material, facilities, and logistical support					
	Recurrent cost budget for operations(e.g. Cost of conducting surveys)					
	Capital investment in infrastructure and equipment					
3.4.2	<u>Improve Institutional Capacity</u>					
	Quality of leadership, management, supervision of operations					
	Administrative structures(e.g. no cooperation between departments					
	Working procedure and task management(e.g. work load distribution)					
	Annual work plan and resource allocation					
3.4.3	<u>Electronic Communication</u>					
	Statistical publication through CD-ROM					
	Communicating in Internet					
	Internet web-based publication and information services					
	Designing Internet web pages					
	School records management					
	Data base design, development and maintenance					
	Survey management at school levels					

3.4.4 If any, please specify-----

3.4.5 What steps ought to be taken to build EMIS capacity at school level?

Part IV-Strategies to improve EMIS

4.1 strategies to improve EMIS development

Listed below are items related to strategies to improve EMIS to support decision-making, monitoring and evaluation of the system by different stakeholders. Please rate them using the numbers below **5-Very high; 4- High; 3-Medium; 2- Low; 1- Very low**

No.	Strategies to improve EMIS development	5	4	3	2	1
4.1.1	Training/education, skill upgrading					
4.1.2	Develop incentive structures					
4.1.3	Adequate budget allocation					
4.1.4	Good governance					
4.1.5	Software development					
4.1.6	Data base development					
4.1.7	Effective and maximum use of IT technology					
4.1.8	Strong record keeping					
4.1.9	Develop well-organized EMIS unit					
4.1.10	Consistent political commitment and support					
4.1.11	Shared vision/planning					
4.1.12	Strong coordination and leadership					

4.1.13. If any, please specify here-----

4.1.14. List the most important factors that improve the development of EMIS?

Part V- Challenges facing EMIS Development

5.1 problems that impede the development of EMIS

Listed below are problems related to the development of EMIS. Please rate them using the numbers to indicate. **Very serious problem (4); serious problem (3); medium problem (2); some times a problem (1); not a problem (0)**

No.	Challenges facing EMIS	5	4	3	2	1
5.1.1	<u>Administrative/Procedures</u>					
	Poor coordination and leadership					
	Lack of system and program monitoring and evaluation					
	Poor record keeping					
5.1.2	<u>Logistics (facilities, computer and other)</u>					
	Lack of computer, CD_RW, Flash-disk,					
	Difficulties in maintaining IT hard ware					
5.1.3	<u>Data related challenges</u>					
	Lack of data integration					
	Delay in data production and data release					
	Duplication and overlap of data					
	Lack of feed-back to data providers					
5.1.4	<u>Structure and Manpower</u>					
	Lack of structure in the organization/school					
	Inadequate manpower					
	High turn over rate					
	Brain-drain (well trained staff leave)					
	Lack of dedicated professionals and workers					
	Lack of clearly defined responsibilities for staff					
	Lack of shared vision/planning for EMIS					
5.1.5	<u>Finance</u>					
	Budget constraint					
	Unfair budget allocation					

5.1.5. If any, please specify here-----

5.1.6. Please specify areas in which you would require assistance to improve challenges of EMIS development in Addis Ababa city Administration Education Bureau-----

5.1.7 What development and failure you have observed in EMIS before and after 5 years in Addis Ababa city administration Education bureau?-----

Addis Ababa University
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Questionnaire to be filled by School Principals and Vice- Principals

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 information on EMIS development and challenges. The findings could be used for planning and improving the system of education in the city. Hence, the success of the study will depend on the quality of your responses. Therefore, you are kindly requested to give accurate and honest information timely to the items presented. Your response will be kept confidential and used only for academic purpose.

Note that:-

1. No need of writing your name
2. Please put "X" marks or '√' tick in the box provided where alternatives are given.
3. For open ended questions, you are kindly requested to give short and precise answer on the space provided,
4. Your fast response will contribute to the successful completion of the research

Part I. Personal Information

1. Sub-City name----- Kebele----- school -----

2. School level- put tick mark "X" or '√' in appropriate box

1-4 ☐ 5-8 ☐ 1-8 ☐ 9-10 ☐ 9-12 ☐

Other-----

3. Job experience (in years),

----- Years in teaching

----- Years in Principal Ship

If other, please specify-----

4. Educational qualification,

☐ TTI Certified

☐ Diploma graduate

☐ First-degree Graduate

☐ Second degree graduate

. If other, Please Specify-----

5. Specialization-----

6. Training received relevant to the post (short-term)

Part II. Educational Management Information(EMI) Need and Availability

2.1 Types of educational information needed by School and other Organs

In your opinion to what extent the following list of information are needed at school and system of education? 5- Very high; 4- high; 3- medium; 2-Low; 1- very Low

No.	Types of educational information needed	Rating Scale				
		5	4	3	2	1
2.1.1	<u>Student related information</u>					
	2.1.1.1 Information on learning achievement of children by subject, grade					
	2.1.1.2 Information on student numbers, performance/ achievement Level by class/grade, sex, age etc					
	2.1.1.3 Information on repeaters by grade, sex and age					
	2.1.1.4 Information on students drop-out by grade, sex, and age					
2.1.2	<u>Personnel and teachers related information</u>					
	2.1.2.1 Information on supervisors report					
	2.1.2.2 Information on teachers numbers by subjects ,qualification, experience, sex, age					
	2.1.2.3 Information on number of supporting staff by sex, qualification, experience, age					
	2.1.2.3 Information on teacher's performance rating					
2.1.3	<u>School Space and environment related Information</u>					
	2.1 3.1. Information on class size					
	2.2 3.2. Information on school sections					
2.1.4	<u>Finance and materials related Information</u>					
	2.1.4.1. Information on financial resources					
	2.1.4.2 Information on utilization of teaching materials					
	2.1.4.3 Information on students text-book					

2.1.5 If any, please specify here-----

2.2 Degree of Educational Information Available

To what extent the following information are available in your school? Put in its degree of availability. Rates as – **5-Very high, 4-High, 3-Medium, 2-Low, 1-Very low**

No	Data / Information	Degree of availability				
		5	4	3	2	1
2.2.1	<u>Personnel and Teacher</u>					
	2.2.1.1 Teacher employment (transfer, turnover)					
	2.2.1.2 Administrative workers employment (transfer, turn over)					
	2.2.1.3 Teachers number by subjects, qualification, experience, sex, age					
2.2.2	<u>Student</u>					
	2.2.2.1 Net enrolment rate by grade and gender					
	2.2.2.2 Gross enrolment rate by grade and gender					
	2.2.2.3 Student wastage by grade /gender					
	2.2.2.4 Enrolment by grade / gender					
	2.2.2.5 Student attendance / discipline					
	2.2.2.6 Student-teacher ratio by grade and gender					
	2.2.2.7 Student-text book ratio by grade and gender					
2.2.3	<u>Finance</u>					
	2.2.3.1 School Annual Expenditure budget by type					
	2.2.3.2 Annual revenue budget by source of income					
	2.2.3.3 Unit cost per student					
2.2.4	<u>Educational Facilities and Materials</u>					
	2.2.4.1 Teacher's Guide by grade					
	2.2.4.2 Teaching aids by subjects, grade					
	2.2.4.3 Students' text-book by grade, subjects					
	2.2.4.4 Students' desk					
	2.2.4.5 Teachers' educational materials and goods (black board, shelf, tables, chairs, computer, calculator, type writer etc)					
	2.2.4.6 Latrine, sport field, adequate water, Library, Laboratory, Plasma					

2.2.5. If any, please specify here-----

2.2.6 In your opinion what is the reason for the unavailability of some educational information in your school? -----

2.3. Utilization of Educational Information

To what extent the following educational information are demanded or used in the school?
Please rate them by using the numbers indicated below. **Very high (5), High (4), Medium (3), Low (2), Very low (1)**

No.	Purposes for which educational information is demanded/used	5	4	3	2	1
2.3.1	Sound decision- making					
2.3.2	School planning and budgeting					
2.3.3	Evaluating the functioning of the school					
2.3.4	Monitoring the ongoing process of the school					
2.3.5	Enrolment projection					
2.3.6	Policy making					
2.3.7	Conducting studies					
2.3.8	Project implementation					

2.3.9. If any other, please specify here-----

----- 2.3.10. Is demand of information satisfactory? If not, please indicate the major problems

2.4 Problems facing in collecting Annual Education census

Listed below are problems encountered in collecting the annual education census questionnaire.
Which ones have you encountered in your school? Please rate them as: **5- Very serious; 4- Serious; 3- Partially serious; 2-Less serious; 1- Not a problem**

No	Problems encountered in collecting the AEC Questionnaire	5	4	3	2	1
2.4.1	Missed Information (not collected but relevant)					
2.4.2	Poor Quality of data collected (reliable, relevant and timeliness)					
2.4.3	Lack of training on how to collect the questionnaire					
2.4.4	Shortage of time to collect the questionnaire					
2.4.5	Lack of clear guide-lines to collect data					

2.4.6. If any other problem, please specify here-----

2.4.7. What steps should be taken to improve collecting Annual Education Census-----

Part III EMIS FUNCTIONING

3.1 Degree of EMIS Functions

To what extent the following EMIS functions are performed in the school? Put "X" mark in the box as: 5= Very good; 4=Good; 3= Satisfactory; 2= Poor; 1= Very poor

No	Purposes	Performance Degree				
		4	3	2	1	0
3.1.1	Filling the AEC questionnaire					
3.1.2	Collecting educational data					
3.1.3	Documenting and storing data					
3.1.4	Dissemination of data					
3.1.5	Reporting timely					

3.1.6. If others, please specify; -----

3.1.7. What strategies should be taken to upgrade EMIS functions at school level-----

3.2 Forms and Dissemination of Educational Information

To what extent educational information used by school, supplied to upper echelon and other organs are organized and disseminated? **Rank them**

Rate as Very high-5, High-4, Medium-3, Low-2, Very low-1

No.	Forms and Dissemination of educational information	Rank
3.2.1	<u>Forms of educational Information</u>	
	3.2.1.1 Computer file	
	3.2.1.2 Removable disks (floppy, flash, CD-Rom)	
	3.2.1.3 Type written paper files	
	3.2.1.4 Hand written paper files	
3.2.2	<u>Dissemination of educational information through</u>	
	3.2.2.1 Web-pages	
	3.2.2.2 Electronically(soft copy)	
	3.2.2.3 Hard copy and Meetings(staff, PTA& others)	

3.2.3. If any form, please specify here-----

3.2.4. What mechanisms should be applied to organize and disseminate of educational information?-----

3.3 Data/information Users

Who uses the data or information generated by your school? Rank them.

No	Body that uses of data/information	Rank
3.3.1	Kebele Education Office	
3.3.2	PTA	
3.3.3	Decision-makers	
3.3.4	Policy-makers	
3.3.5	Sub- city Education Department	
3.3.6	Regional Education Bureau	
3.3.7	Kebele cabinet	
3.3.8	NGOs	
3.3.9	Administrative bodies	
3.3.10	Other Kebele offices	
3.3.11	Parents and communities	

3.3.12. If other, please specify-----

3.3.13. What aspects of the information generated by school should be improved?-----

3.4 Improve EMIS Capacity

In your opinion, what strategies should be taken to improve EMIS capacity at school level?

Please rate them as: **Very high (5), High (4), Medium (3), Low (2), Very low (1)**

No.	EMIS Capacity	5	4	3	2	1
3.4.1	<u>Improve Resource Capacity</u>					
	Number of persons assigned for statistical work					
	Adequacy of skills necessary for statistical work					
	Adequate salary relative to required work & qualification					
	Material, facilities, and logistical support					
	Recurrent cost budget for operations(e.g. Cost of conducting surveys)					
	Capital investment in infrastructure and equipment					
3.4.2	<u>Improve Institutional Capacity</u>					
	Quality of leadership, management, supervision of operations					
	Administrative structures(e.g. no cooperation between departments					
	Working procedure and task management(e.g. work load distribution)					
	Annual work plan and resource allocation					
	Professional development opportunities and status of statisticians as professionals					
3.4.3	<u>Electronic Communication</u>					
	Statistical publication through CD-ROM					
	Communicating in Internet					
	Internet web-based publication and information services					
	Designing Internet web pages					
	School records management					
	Data base design, development and maintenance					
	Survey management at school levels					

3.4.4 If any, please specify-----

3.4.5 What steps ought to be taken to build EMIS capacity at school level?

Part IV-Strategies to improve EMIS

4.1 strategies to improve EMIS development

Listed below are items related to strategies to improve EMIS to support decision-making, monitoring and evaluation of the system by different stakeholders. Please rate them using the numbers below **5-Very high; 4- High; 3-Medium; 2- Low; 1- Very high**

No.	Strategies to improve EMIS development	5	4	3	2	1
4.1.1	Training/education, skill upgrading					
4.1.2	Develop incentive structures					
4.1.3	Adequate budget allocation					
4.1.4	Good governance					
4.1.5	Software development					
4.1.6	Data base development					
4.1.7	Effective and maximum use of IT technology					
4.1.8	Strong record keeping					
4.1.9	Develop well-organized EMIS unit					
4.1.10	Consistent political commitment and support					
4.1.11	Shared vision/planning					
4.1.12	Strong coordination and leadership					

4.1.13. If any, please specify here-----

4.1.14. List the most important factors that improve the development of EMIS?

Part V- Challenges facing EMIS Development

5.1 problems that impede the development of EMIS

Listed below are problems related to the development of EMIS. Please rate them using the numbers to indicate. **Very serious problem (4); serious problem (3); medium problem (2); some times a problem (1); not a problem (0)**

No.	Challenges facing EMIS	5	4	3	2	1
5.1.1	<u>Administrative/Procedures</u> Poor coordination and leadership					
	Lack of system and program monitoring and evaluation					
	Poor record keeping					
	Lack of organizational readiness					
5.1.2	<u>Logistics (facilities, computer and other)</u> Lack of computer, CD_RW, Flash-disk,					
	Difficulties in maintaining IT hard ware					
5.1.3	<u>Data related challenges</u> Lack of data integration					
	Delay in data production and data release					
	Duplication and overlap of data					
	Lack of feed-back to data providers					
	Inaccurate and Incomplete information					
5.1.4	<u>Structure and Manpower</u> Lack of structure in the organization/school					
	Inadequate manpower					
	High turn over rate					
	Brain-drain (well trained staff leave)					
	Lack of dedicated professionals and workers					
	Lack of clearly defined responsibilities for staff					
	Lack of shared vision/planning for EMIS					
5.1.5	<u>Finance</u> Budget constraint					
	Unfair budget allocation					

5.1.5. If any, please specify here-----

5.1.6. Please specify areas in which you would require assistance to improve challenges of EMIS development in Addis Ababa city Administration Education Bureau-----

5.1.7 What development and failure you have observed in EMIS before and after 5 years in Addis Ababa city administration Education bureau?-----

Addis Ababa University

College of Education

Department of Educational Planning and Management

Questionnaire to be filled by Kebele Education Office (KEO) head, and Data analysts

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 information on EMIS development and challenges. The findings could be used for planning and improving the system of education in the city. Hence, the success of the study will depend on the quality of your responses. Therefore, you are kindly requested to give accurate and honest information timely to the items presented. Your response will be kept confidential and used only for academic purpose.

Note that:-

1. No need of writing your name
2. Please put "X" marks or '✓' tick in the box provided where alternatives are given.
3. For open ended questions, you are kindly requested to give short and precise answer on the space provided,
4. Your fast response will contribute to the successful completion of the research

Part I. Personal Information

1. Name of your Kebele----- Estimated distance of your kebele education office from the Sub-city (in Kms) -----
2. Number of Schools in your Kebele:
Primary Schools-----
Secondary Schools-----
3. Qualification of the Statistician. Please put "X" mark in appropriate box.
☐ Secondary school complete ☐ TTI certified
☐ Diploma Graduate ☐ First Degree Graduate
☐ Second Degree Graduate

If other, please specify here-----

4. Work experience in years:

----- Years in teaching

-----Years in principal ship

-----Years in Kebele Education Office (KEO) Statisticians

If other, please specify-----

5. Have you received any training as Statistician before and after you started work?

Yes ☐

No ☐

6. If you say 'Yes' what were the training areas?

- ☐ Survey administration
- ☐ System development and programming
- ☐ Collecting educational data
- ☐ Storing, processing, and analyzing data
- ☐ Compiling reports
- ☐ Publication, distribution and dissemination
- ☐ Interpreting data
- ☐ Projecting future educational trends
- ☐ Networking and communication
- ☐ EMIS management and innovative leadership
- ☐ Planning and programming
- ☐ Monitoring and evaluation
- ☐ Documentation
- ☐ Maintenance of both hardware and software
- ☐ Compiling the AEC questionnaire

If other, please specify-----

7. Salary scale for Statistician (in Birr) -----

8. In your opinion, do you think that the salary scale is adequate for the statistics position compared to other Kebele Education Office (KEO) equivalent positions?

Yes ☐

No ☐

9. Number of staff working in Kebele Education Office (KEO) EMIS unit. -----

10. Do you think the number of positions found in EMIS unit is enough?

Yes ☐ No ☐

11. If your answer is 'No' what is your justification? -----

Part II. Educational Management Information(EMI) Need and Availability

2.1 Types of educational information needed by Kebele and other Organs

In your opinion to what extent the following list of information are needed at Kebele and system of education? 5- Very high; 4- high; 3- medium; 2-Low; 1- very Low

No.	Types of educational information needed	Rating Scale				
		5	4	3	2	1
2.1.1	<u>Student related information</u>					
	2.1.1.1 Information on learning achievement of children by subject, grade					
	2.1.1.2 Information on student numbers, performance/ achievement Level by class/grade, sex, age etc					
	2.1.1.3 Information on repeaters by grade, sex and age					
	2.1.1.4 Information on students drop-out by grade, sex, and age					
2.1.2	<u>Personnel and teachers related information</u>					
	2.1.2.1 Information on supervisors report					
	2.1.2.2 Information on teachers numbers by subjects ,qualification, experience, sex, age					
	2.1.2.3 Information on teacher's performance rating					
2.1.3	<u>School Space and environment related Information</u>					
	2.1.3.1. Information on class size					
	2.2.3.2. Information on number of sections					
2.1.4	<u>Finance and materials related Information</u>					
	2.1.4.1. Information on financial resources					
	2.1.4.2 Information on utilization of teaching materials					
	2.1.4.3 Information on students text-book					

2.2 Degree of Educational Information Available

To what extent the following information are available in your kebele? Put in its degree of availability. Rates as – 5-Very high, 4-High, 3-Medium, 2-Low, 1-Very low

No	Data / Information	Degree of availability				
		5	4	3	2	1
2.2.1	Personnel and Teacher					
	2.2.1.1 Teacher employment (transfer, turnover)					
	2.2.1.2 Administrative workers employment (transfer, turn over)					
	2.2.1.3 Teachers number by subjects ,qualification, experience, sex, age					
2.2.2	Student					
	2.2.2.1 Net enrolment rate by grade and gender					
	2.2.2.2 Gross enrolment rate by grade and gender					
	2.2.2.3 Students drop out rate					
	2.2.2.4 Students repetition rate					
	2.2.2.5 Student attendance / discipline					
	2.2.2.6 Student-teacher ratio by grade and gender					
	2.2.2.7 Student-text book ratio by grade and gender					
2.2.3	Finance					
	2.2.3.1 School annual expenditure budget by type					
	2.2.3.2 Annual revenue budget by source of income					
	2.2.3.3 Unit cost per student					
2.2.4	Educational Facilities and Materials					
	2.2.4.1 Teacher's Guide by grade, subjects					
	2.2.4.2 Teaching aids by grade, subjects					
	2.2.4.3 Students' text-book by grade, subjects					
	2.2.4.4 Students' desk					
	2.2.4.5 Teachers' educational materials and goods (black board, shelf, tables, chairs, computer, calculator, type writer etc)					

2.2.5. If any, please specify here-----

2.2.6. In your opinion what is the reason for the unavailability of some educational information in your school? -----

2.3. Utilization of Educational Information

To what extent the following educational information demanded or used in the Kebele? Please rate them by using the numbers indicated below. **Very high (5), High (4), Medium (3), Low (2), Very low (1)**

No.	Purposes for which educational information is demanded/used for	5	4	3	2	1
2.3.1	Sound decision- making					
2.3.2	Kebele planning and budgeting					
2.3.3	Evaluating the functioning of the Kebele & school					
2.3.4	Monitoring the ongoing process of the Kebele and school					
2.3.5	Enrolment projection					
2.3.6	Education Policy-making					
2.3.7	Knowing the usefulness of various kinds of support provided					
2.3.8	Project implementation					

2.3.9. If any other, please specify here-----

-

2.3.10. Is demand of information satisfactory? If not, please indicate the major problems

2.4 Problems facing in collecting Annual Education census

Listed below are problems encountered in collecting the annual education census questionnaire.

Which ones have you encountered in your Kebele? Please rate them as: **5- Very serious; 4-**

Serious; 3- Partially serious; 2-Less serious; 1- Not a problem

No	Problems encountered in collecting the AEC Questionnaire	5	4	3	2	1
2.4.1	Missed Information (not collected but relevant)					
2.4..2	Poor Quality of data collected (Not reliable, relevant and timeliness)					
2.4..3	Lack of orientation on how to collect/fill the questionnaire					
2.4..4	Shortage of time to collect/fill the questionnaire					
2.4..5	Lack of clear guide lines to collect the data					

2.4.6. If any other problem, please specify here-----

2.4.7. What steps should be taken to improve collecting Annual Education Census?-----

Part III EMIS FUNCTIONING

3.1 Degree of EMIS Functions

To what extent the following EMIS functions are performed in the Kebele? Put "X" mark in the appropriate box as: **5= Very good; 4=Good; 3= Satisfactory; 2= Poor; 1= Very poor**

No	Purposes	Performance Degree				
		5	4	3	2	1
3.1.1	Collecting educational data from schools					
3.1.2	Compiling data/information					
3.1.3	Analyzing data					
3.1.4	Documenting and storing data					
3.1.5	Dissemination of data					
3.1.6	Reporting timely					

3.1.7. If others, please specify; -----

-

3.1.8. Mention factors that impede/ hinder EMIS functions in your Kebele?-----

--

3.2 Forms and Dissemination of Educational Information

To what extent educational information used by Kebele, supplied to upper echelon and other organs are organized and disseminated? Rank them

No.	Forms and Dissemination of educational information	Rank
3.2.1	<u>Forms of educational Information</u>	
	3.2.1.1 Computer file	
	3.2.1.2 Removable disks (floppy, flash, CD-Rom)	
	3.2.1.3 Type written paper files	
	3.2.1.4 Hand written paper files	
3.2.2	<u>Dissemination of educational information through</u>	
	3.2.2.1 Web-pages	
	3.2.2.2 Electronically(soft copy)	
	3.2.2.3 Meetings(staff, PTA& others)	

3.2.3. If any form, please specify here-----

-

3.2.4. What mechanisms should be applied to solve problems related to organizing and disseminating educational information?-----

3.3 Data/information Users

Who uses the data or information generated by your Kebele? Rank them.

No	Body that uses of data/information	Rank
3.3.1	Kebele Education office	
3.3.2	Policy- makers	
3.3.3	Kebele Education Training Board (KETB)	
3.3.4	Kebele council elects	
3.3.5	Sub- city Education Department	
3.3.6	Regional Education Bureau	
3.3.7	Planners	
3.3.8	NGOs	
3.3.9	Parents and Teachers Association	
3.3.10	Other government offices	
3.3.11	Parents and community	

3.3.12. If other, please specify-----

3.3.13. What aspects of the information generated by school should be improved?-----

3.4 Improve EMIS Capacity

In your opinion, what strategies should be taken to improve EMIS capacity at Kebele level?

Please rate them as: **Very high (5), High (4), Medium (3), Low (2), Very low (1)**

No.	EMIS Capacity	5	4	3	2	1
3.4.1	Improve Resource Capacity					
	Number of persons assigned for statistical work					
	Adequacy of skills necessary for statistical work					
	Adequate salary relative to required work & qualification					
	Material, facilities, and logistical support					
	Recurrent cost budget for operations(e.g. Cost of conducting surveys)					
	Capital investment in infrastructure and equipment					
3.4.2	Improve Institutional Capacity					
	Quality of leadership, management, supervision of operations					
	Administrative structures(e.g. no cooperation between departments)					
	Working procedure and task management(e.g. work load distribution)					
	Annual work plan and resource allocation					
	Professional development opportunities and status of statisticians as professionals					
3.4.3	Electronic Communication					
	Statistical publication through CD-ROM					
	Communicating in Internet					
	Internet web-based publication and information services					
	Designing Internet web pages					
	School records management					
	Data base design, development and maintenance					

3.4.4. If any, please specify-----

3.4.5. What steps ought to be taken to resolve problems related to EMIS capacity at Kebele level?

Part IV-Strategies to improve EMIS

4.1 strategies to improve EMIS development

Listed below are items related to strategies to improve EMIS to support decision-making, monitoring and evaluation of the system by different stakeholders. Please rate them using the numbers below: 5-Very high; 4- High; 3-Medium; 2- Low; 1- Very ~~high~~ low

No.	Strategies to improve EMIS development	5	4	3	2	1
4.1.1	Training/education, skill upgrading					
4.1.2	Develop incentive structures					
4.1.3	Adequate budget allocation					
4.1.4	Good governance					
4.1.5	Software development					
4.1.6	Data base development					
4.1.7	Effective and maximum use of IT technology					
4.1.8	Strong record keeping					
4.1.9	Develop well-organized EMIS unit					
4.1.10	Consistent political commitment and support					
4.1.11	Shared vision/planning					
4.1.12	Strong coordination and leadership					

4.1.13. If any, please specify here-----

4.1.14. List the most important factors that improve the development of EMIS?

Part V- Challenges facing EMIS Development

5.1 problems that impede the development of EMIS

Listed below are problems related to the development of EMIS. Please rate them using the numbers to indicate. **Very serious problem (5); serious problem (4); medium problem (3); some times a problem (2); not a problem (1)**

No.	Challenges facing EMIS Development	5	4	3	2	1
5.1.1	<u>Administrative/Procedures related challenges</u>					
	Poor coordination and leadership					
	Lack of system and program monitoring and evaluation					
	Poor record keeping					
5.1.2	<u>Logistics (facilities, computer and other) related challenges</u>					
	Lack of computer, CD_RW, Flash-disk,					
	Difficulties in maintaining IT hard ware					
5.1.3	<u>Data related challenges</u>					
	Lack of data integration					
	Delay in data production and data release					
	Duplication and overlap of data					
	Lack of feed-back to data providers					
5.1.4	<u>Structure and Manpower related challenges</u>					
	Lack of structure in the organization/school					
	Inadequate manpower					
	High turn over rate					
	Brain-drain (well trained staff leave)					
	Lack of dedicated professionals and workers					
	Lack of clearly defined responsibilities for staff					
5.1.5	<u>Finance related challenges</u>					
	Budget constraint					
	Unfair budget allocation					

5.1.6. If any other source, please specify here-----

5.1.7. Please specify areas in which you would require assistance to improve challenges of EMIS
development in Addis Ababa city Administration Education Bureau-----

Addis Ababa University

College of Education

Department of Educational Planning and Management

Questionnaire to be filled by Sub-city Education Department heads and EMIS unit

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 information on EMIS development and challenges. The findings could be used for planning and improving the system of education in the city. Hence, the success of the study will depend on the quality of your responses. Therefore, you are kindly requested to give accurate and honest information timely to the items presented. Your response will be kept confidential and used only for academic purpose.

Note that:-

2. No need of writing your name
3. Please put "X" marks or '✓' tick in the box provided where alternatives are given.
4. For open ended questions, you are kindly requested to give short and precise answer on the space provided,
5. Your fast response will contribute to the successful completion of the research

Part I. Personal Information

1. Name of your Sub-city----- Estimated distance of your Sub-city
from the regional education bureau (in Kms) -----

2. Number of government schools in your region/sub-city?

Primary Schools-----

Secondary Schools-----

3. Qualification of the Statistician. Please put "X" mark in appropriate box.

- | | |
|--|--|
| ☐ Secondary school complete | ☐ TTI certified |
| ☐ Diploma Graduate | ☐ First Degree Graduate |

☐ Second Degree Graduate

If other, please specify here-----

4. Work experience in years:

----- Years in teaching

-----Years in principal ship

----- Years in sub-city/regional Statisticians

If other, please specify-----

5. Have you received any training as Statistician before you started work?

Yes ☐

No ☐

6. If you say 'Yes' what were the training areas?

☐ Survey administration

☐ System development and programming

☐ Collecting educational data

☐ Storing, processing, and analyzing data

☐ Compiling reports

☐ Publication, distribution and dissemination

☐ Interpreting data

☐ Projecting future educational trends

☐ Networking and communication

☐ EMIS management and innovative leadership

☐ Planning and programming

☐ Monitoring and evaluation

☐ Documentation

☐ Maintenance of both hardware and software

☐ Compiling the Annual education census questionnaire

If other, please specify-----

7. Salary scale for Statistician (in Birr) -----

8. In your opinion, do you think that the salary scale is adequate for the statistics position compared to other sub-city/regional equivalent positions?

Yes ☐

No ☐

9. Number of staff working in sub-city EMIS unit. -----

10. Do you think the number of positions found in EMIS unit is enough?

Yes ☐

No ☐

11. If your answer is 'No' what is your justification? -----

Part II. Educational Management Information(EMI) Need and Availability

2.1 Types of educational information needed by Sub-city and other Organs

In your opinion to what extent the following list of information are needed at sub-city/regional and system of education? **5- Very high; 4- high; 3- medium; 2-Low; 1- very Low**

No.	Types of educational information needed	Rating Scale				
		5	4	3	2	1
2.1.1	<u>Student related information</u>					
	2.1.1.1 Information on learning achievement of children by subject, grade					
	2.1.1.2 Information on student numbers, performance/ achievement Level by class/grade, sex, age etc					
	2.1.1.3 Information on repeaters by grade, sex and age					
2.1.2	<u>Personnel and teachers related information</u>					
	2.1.2.1 Information on supervisors report					
	2.1.2.2 Information on teachers numbers by subjects ,qualification, experience, sex, age					
	2.1.2.3 Information on teacher's performance rating					
2.1.3	<u>School Space and environment related Information</u>					
	2.1.3.1. Information on class size					
2.1.4	<u>Finance and materials related Information</u>					
	2.1.4.1. Information on financial resources					
	2.1.4.2 Information on utilization of teaching materials					
	2.1.4.3 Information on students text-book					

2.1.5. If any, please specify here-----

2.2 Degree of Educational Information Available

To what extent the following information are available in your sub-city/region? Put in its degree of availability. Rates as – **5-Very high, 4-High, 3-Medium, 2-Low, 1-Very low**

No	Data / Information	Degree of availability				
		5	4	3	2	1
2.2.1	<u>Personnel and Teacher</u>					
	2.2.1.1 Teacher employment (transfer, turnover)					
	2.2.1.2 Administrative workers employment (transfer, turn over)					
	2.2.1.3 Teachers number by subjects ,qualification, experience, sex, age					
2.2.2	<u>Students</u>					
	2.2.2.1 Net enrolment rate by grade and gender					
	2.2.2.2 Gross enrolment rate by grade and gender					
	2.2.2.3 students drop-out rate					
	2.2.2.4 Students repetition rate					
	2.2.2.5 Student-teacher ratio by grade and gender					
	2.2.2.6 Student-text book ratio by grade and gender					
2.2.3	<u>Finance</u>					
	2.2.3.1 School Annual Expenditure budget by type					
	2.2.3.2 Annual revenue budget by source of income					
	2.2.3.3 Unit cost per student					
2.2.4	<u>Educational Facility and Materials</u>					
	2.2.4.1 Teacher's Guide by grade, subjects					
	2.2.4.2 Teaching aids by grade, subjects					
	2.2.4.3 Students' text-book by grade, subjects					
	2.2.4.4 Students' desk					
	2.2.4.5 Teachers' educational materials and goods (black board, shelves, tables, chairs, computer, calculator, type writer etc)					
	2.2.4.6 Latrine, sport field, adequate water, laboratory, library, plasma materials					
	2.2.4.7 Health service, organized Mini media,					

2.2.5. If any, please specify here-----

----- 2.2.6. In your opinion what is the reason for the unavailability of some educational information in your sub-city/region? -----

2.3. Utilization of Educational Information

To what extent the following educational information demanded or used in the Sub-city/region?
Please rate them by using the numbers indicated below. **Very high (5), High (4), Medium (3), Low (2), Very low (1)**

No.	Purposes for which educational information is demanded/used for	5	4	3	2	1
2.3.1	Sound decision- making					
2.3.2	planning and budgeting					
2.3.3	Evaluating the functioning of the sub-city, Kebele & school					
2.3.4	Monitoring the ongoing process of the Sub-city					
2.3.5	Preparing development projects in collaboration with NGOs					
2.3.6	Enrolment projection					
2.3.7	Education Policy making					
2.3.8	Knowing the usefulness of various kinds of support provided					
2.3.9	Project implementation					

2.3.10. If any other, please specify here-----

-

2.3.11. Is demand of information satisfactory? If not, please indicate the major problems

2.4 Problems facing in collecting Annual Education census

Listed below are problems encountered in collecting the annual education census questionnaire.
Which ones have you encountered in your Sub-city/region? Please rate them as: **5- Very serious; 4-Serious; 3- Partially serious; 2-Less serious; 1- Not a problem**

No	Problems encountered in collecting the AEC Questionnaire	5	4	3	2	1
2.4.1	Missed Information (not collected but relevant)					
2.4.2	Poor Quality of data collected (not reliable, relevant and timeliness)					
2.4.3	Lack of orientation /training on how to collect/fill the questionnaire					
2.4.4	Lack of manual on how to collect/fill the questionnaire					
2.4.5	shortage of time to collect the questionnaire					
2.4.6	Lack of instructions on how to administer the questionnaire					

2.4.8. If any other problem, please specify here-----

-

2.4.9 What steps should be taken to improve collecting Annual Education Census?-----

Part III EMIS FUNCTIONING

3.1 Degree of EMIS Functions

To what extent the following EMIS functions are performed in the Sub-city/region? Put "X" mark in the appropriate box as: 5= Very good; 4=Good; 3= Satisfactory; 2= Poor; 1= Very poor

No	Purposes	Performance Degree				
		5	4	3	2	1
3.1.1	Preparing questionnaire for collecting data					
3.1.2	Collecting educational data from Kebele and schools					
3.1.3	Analyzing data					
3.1.4	Documenting and storing data					
3.1.5	Dissemination of data					
3.1.6	Reporting timely					

3.1.7. If others, please specify; -----

-

3.1.8. Mention factors that impede/ hinder EMIS functions in your sub-city/region?-----

3.2 Forms and Dissemination of Educational Information

To what extent educational information used by Sub-city/region, supplied to upper echelon and other organs are organized and disseminated? **Rank them**

No.	Forms and Dissemination of educational information	Rank
3.2.1	Forms of educational Information	
	3.2.1.1 Computer file	
	3.2.1.2 Removable disks (floppy, flash, CD-Rom)	
	3.2.1.3 Type written paper files	
	3.2.1.4 Hand written paper files	
3.2.2	Dissemination of educational information through	
	3.2.2.1 Web-pages/networks	
	3.2.2.2 Electronically(soft copy)	
	3.2.2.3 Meetings(staff, PTA& others)	

3.2.3. If any form, please specify here-----

-----3.2.4. What mechanisms should be applied to solve problems related to organizing and disseminating of educational information?-----

3.3 Data/information Users

Who uses the data or information generated by your sub-city/region? Rank them.

No	Body that uses of data/information	Rank
3.3.1	Kebele Education office	
3.3.2	Policy-makers	
3.3.3	finance and economic development	
3.3.4	Sub-city council elects	
3.3.5	Sub- city Education Department	
3.3.6	Regional Education Bureau	
3.3.7	Planners	
3.3.8	NGOs	
3.3.9	Sub-city administration	
3.3.10	Other sub-city offices	
3.3.11	Parents and Community	

3.3.12. If other, please specify-----

3.3.13. What aspects of information generated by school should be improved?-----

3.4 Improve EMIS Capacity

In your opinion, what strategies should be taken to improve EMIS capacity at Sub-city/regional level? Please rate them as: **Very high (5), High (4), Medium (3), Low (2), Very low (1)**

No.	EMIS Capacity	5	4	3	2	1
3.4.1	Improve Resource Capacity					
	Number of persons assigned for statistical work					
	Adequacy of skills necessary for statistical work					
	Adequate salary relative to required work & qualification					
	Material, facilities, and logistical support					
	Recurrent cost budget for operations(e.g. Cost of conducting surveys)					
	Capital investment in infrastructure and equipment					
3.4.2	Improve Institutional Capacity					
	Quality of leadership, management, supervision of operations					
	Administrative structures(e.g. no cooperation between departments					
	Working procedure and task management(e.g. work load distribution)					
	Annual work plan and resource allocation					
3.4.3	Electronic Communication					
	Statistical publication through CD-ROM					
	Communicating in Internet					
	Internet web-based publication and information services					
	Designing Internet web pages					
	School records management					
	Data base design, development and maintenance					

3.4.4. If any, please specify-----

3.4.5. What strategies ought to be taken to resolve problems related to EMIS capacity at sub-city/regional level?

Part IV-Strategies to improve EMIS

4.1 strategies to improve EMIS development

Listed below are items related to strategies to improve EMIS to support decision-making, monitoring and evaluation of the system by different stakeholders. Please rate them using the numbers below

5-Very high; 4- High; 3-Medium; 2- Low; 1- Very high *low*

No.	Strategies to improve EMIS development	5	4	3	2	1
4.1.1	Training/education, skill upgrading					
4.1.2	Develop incentive structures					
4.1.3	Adequate budget allocation					
4.1.4	Good governance					
4.1.5	Software development					
4.1.6	Data base development					
4.1.7	Effective and maximum use of IT technology					
4.1.8	Strong record keeping					
4.1.9	Develop well-organized EMIS unit					
4.1.10	Consistent political commitment and support					
4.1.11	Shared vision/planning					
4.1.12	Strong coordination and leadership					

4.1.13. If any, please specify here-----

4.1.14. List the most important factors that improve the development of EMIS?

Part V- Challenges facing EMIS

5.1 problems that impede the development of EMIS

Listed below are problems related to the development of EMIS. Please rate them using the numbers to indicate. Very serious problem (5); serious problem (4); medium problem (3); some times a problem (2); not a problem (1)

No.	Challenges facing EMIS	5	4	3	2	1
5.1.1	<u>Administrative/Procedures related challenges</u>					
	Poor coordination and leadership					
	Lack of system and program monitoring and evaluation					
	Poor record keeping					
	Lack of organizational readiness					
5.1.2	<u>Logistics (facilities, computer and other)</u>					
	Lack of computer, CD_RW, Flash-disk,					
	Difficulties in maintaining IT hard ware					
5.1.3	<u>Data related challenges</u>					
	Lack of data integration					
	Delay in data production and data release					
	Duplication and overlap of data					
	Lack of feed-back to data providers					
	Inaccurate and Incomplete information					
5.1.4	<u>Structure and Manpower related challenges</u>					
	Lack of structure in the organization/school					
	Inadequate manpower					
	High turn over					
	Brain-drain (well trained staff leave)					
	Lack of dedicated professionals and workers					
	Lack of clearly defined responsibilities for staff					
	Lack of shared vision/planning for EMIS					
5.1.5	<u>Finance related challenges</u>					
	Budget constraint					
	Unfair budget allocation					

5.1.6. If any other source, please specify here-----

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5.1.7. Please specify areas in which you would require assistance to improve challenges of EMIS development in Addis Ababa city Administration Education Bureau-----

5.1.8.. What development and failure have you observed in EMIS before and after 5 years in Addis Ababa city administration Education bureau

Interview Questions to Heads of Addis Ababa City Administration Education Bureau, the sub-city Finance and Economic Department, as well as Regional EMIS and planning unit

1. Does your office collect educational information from the schools in the sub- city?
If yes, do you prepare the instrument for data collection?
Do you conduct data collection annually, in six months, or quarterly?
2. What kind of data do you need for your planning?
3. What efforts you made to improve quality data to support decision making, monitoring, and evaluation of the system?
4. To what extent EMIS is demanded/used throughout the education system?
5. What are the problems you encountered when collecting the Annual Education Census?
 - I. Incomplete information?
 - II. Inaccurate information?
 - III. Delay in the availability of updated information?
 - IV. Delay in Data production?
 - V. Any other?
6. Who uses/demands education information from EMIS most?
 - I. Researchers?
 - II. Decision-makers?
 - III. Department Heads?
 - IV. Bureau Heads?
 - V. NGOs?
 - VI. Regional Cabinet?
 - VII. Other Regional Bureaus?
 - VIII. Who else?
7. For what purpose do you use/demand the educational information obtained from Kebele and schools?
 - A. For sound decision making?

B. For planning and budgeting?

C. For monitoring and evaluation?

D. For policy making?

E. For developing indicators?

F. For designing educational projects and program?

G. Any other?

6. What measures should be taken to up-grade EMIS capacity?

10. How many copies of your annual statistical abstract are distributed to different users for the last five years?

9.1. 2005-----

9.2. 2006-----

9.3. 2007 -----

9.4. 2008-----

9.5. 2009-----

11. Which areas of your EMIS in Addis Ababa city Administration Education Bureau have been changed or improved for the last five years?

a) Data collection technique b) Data entry c) Data base system d) Annual Education Census questionnaire e) data analysis f) What else change?

12. What challenges have you encountered in the development of EMIS?

a. Lack of a culture of communication and information exchange?

b. Lack of shared vision for EMIS?

c. Lack of organizational readiness?

d. High turn over rate?

e. Lack of system and program monitoring and evaluation?

f. Poor coordination and leadership?

g. Lack of dedicated professionals and workers?

h. Delay of data production?

i. Production of unreliable data?

j. Lack of clearly defined responsibilities for staff?

h. Any other?

13. What strategies should be taken to improve the development of EMIS?

DECLARATION

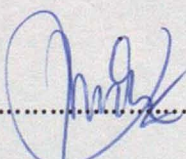
I, the under signed, declared that this thesis is my original work, has not been presented for a degree in any other University and that all sources of materials used for the thesis have been duly acknowledged.

Name – Mengistu Amare

Signature-.....

Date- June 08/2010

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

Signature-.....

Name- Dr. Jeilu Oumer

Date: June 09/2010

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