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CURRICULUM AND EVALUATION

School Administrators' use of Education Management Information System for Administrative Effectiveness in Public Secondary Schools in the Limbe municipality

Dissertation submitted to the Faculty of Education, Department of Curriculum and Evaluation in partial fulfilment of the requirement for the award of a Master's of Education Degree in Educational Management (MED)

Speciality: Administration and Inspection in Education

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SEPTEMBER 2024

DECLARATION

I, **MUNAAH EMELDA AKWA**, do hereby declare that this dissertation is my original work and that it has not been submitted and will not be submitted for any academic award in any other University for a similar or any other degree award.

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CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by the University of Yaoundé I, a dissertation entitled: **"School Administrator's use of Education Management Information System for administrative Effectiveness in public secondary schools in the Limbe municipality."**, in partial fulfilment of the requirements for the award of a Master of Education Degree in Educational Management from the University of Yaoundé I

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To my Mom Mrs Akwa Frida Maita nee Bati

And

My Father Mr. Akwa Gaius Tabe

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ABSTRACT

The main purpose of this study was to examine school administrators' use of Education Management Information System (EMIS) for administrative effectiveness in public secondary schools in the Limbe municipality. The concepts under investigation were Student Information system (SIS), Financial Information system (FIS) and Human Resource Information System (HRIS). Three research questions guided the study, and three null hypotheses were tested. The study adopted the descriptive survey research based on a quantitative design and a Likert scale questionnaire was used to administer research questions to a sample of 55 respondents, who were principals, vice principals, bursars in the Limbe municipality The instrument was validated by three experts and its reliability was determined using Cronbach alpha method which yielded a high reliability coefficient value 0.96. The research was guided by the Innovation Diffusion Theory and the Lazy User Model. Data collected were analyzed using frequency, percentage mean ratings and standard deviation for answering the research questions, while the simple linear regression was used to test the hypotheses. Findings indicated that Student Information System, Financial Information System and Human Resource Information System has a significant impact on administrative effectiveness in public secondary schools in the Limbe municipality. It was concluded that there is a significant relationship between EMIS and administrative effectiveness in the public secondary schools in the Limbe Municipality. Base on the findings it was recommended by the researcher that the Ministry of Secondary Education offer school administrators and staff regular online support for EMIS through a permanent expert who can assist with EMIS.

Key words: **Education, Information, Education Management Information System, Administrator.**

RESUME

L'objectif principal de cette étude était d'examiner l'utilisation par les administrateurs scolaires du système d'information sur la gestion de l'éducation pour l'efficacité administrative dans les écoles secondaires publiques de la municipalité de Limbe. Les concepts étudiés sont le système d'information sur les élèves (SIS), le système d'information financière (FIS) et le système d'information sur les ressources humaines (HRIS). Trois questions de recherche ont guidé l'étude et trois hypothèses nulles ont été testées. L'étude a adopté la recherche descriptive basée sur une conception quantitative et un questionnaire à échelle de Likert a été utilisé pour administrer les questions de recherche à un échantillon de 55 répondants, qui étaient des directeurs, des directeurs adjoints, des économes dans la municipalité de Limbe. L'instrument a été validé par trois experts et sa fiabilité a été déterminée en utilisant la méthode Cronbach alpha qui a donné un coefficient de fiabilité élevé de 0,96. La recherche a été guidée par la théorie de la diffusion de l'innovation et le modèle de l'utilisateur paresseux. Les données collectées ont été analysées à l'aide de la fréquence, des notes moyennes en pourcentage et de l'écart-type pour répondre aux questions de recherche, tandis que la régression linéaire simple a été utilisée pour tester les hypothèses. Les résultats indiquent que le système d'information sur les élèves, le système d'information financière et le système d'information sur les ressources humaines ont un impact significatif sur l'efficacité administrative dans les écoles secondaires publiques de la municipalité de Limbe. Il est conclu qu'il existe une relation significative entre le SIGE et l'efficacité administrative dans les écoles secondaires publiques de la municipalité de Limbe. Sur la base de ces résultats, le chercheur a recommandé que le ministère de l'enseignement secondaire offre aux administrateurs et au personnel des écoles un soutien en ligne régulier pour SIGE par le biais d'un expert permanent qui peut aider avec EMS.

Mots clés : **Éducation, information, système d'information sur la gestion de l'éducation, administrateur.**

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ABBREVIATIONS AND ACRONYMS

EMIS …….Education Management Information System

DDSE…… Divisional Delegation of Secondary Education

UNICEF ……United Nations International Children Emergency Fund

CSCW ……..Computer Supported Cooperative Work

DSSEF …….……Document de Stratégie du Secteur de l`Education et de la Formation

GCE ……General Certificate of Education

IS……Information System

MIS …….Management Information System

ICT …….Information and Communication Technologies

CESA ……Continental Education Strategy For Africa

EFA ……Education For All

MINESEC …….Ministry of Secondary Education

MINEPAT…… Ministere de l'economie, de la planification et de L'Amenagement du Territoire

MoHE ……Ministry of Higher Education

NDS ……..National Development Strategy

AU ……African Union

FIS ……Financial Information System

SIS……Student Information System

HRIS…….Human Resource Information System

SDG …….Sustainable Development Goal

SPSS ……Statistical Package for the Social Sciences

UNESCO……....United Nations Educational Scientific and Cultural Organisation

USA ……United States of America

UIS…….. UNESCO Institute for Statistics

LCC……..Limbe City Council

CHAPTER ONE

INTRODUCTION

Administrative effectiveness is very vital for the growth and success of any organisation, including educational institution. The aim for which a school is created can only be achieved through effective administration. However, it has been noted that technology has great prospects to provide new kinds of school administrative opportunities. (Fleming-McCormick,1995). It was observed by Gray and Smith (2007), that the 21st century school administrators face many challenges emanating from technology. The participation of school administrators in professional development is relevant for any meaningful change to occur as they have a crucial role to play. Data use in school administration currently ranges over many areas, informing administrators about demographics, school processes, student learning, as well as perceptions and projections (Bernhardt, 2000). Administrative effectiveness can be measured through school administrators' extent of accountability, school performance improvement, curriculum improvement, effective resources management, monitoring, proper delegation of tasks, timely discharge of duties and constant meetings of targets (Akinfolarin, 2017). Some areas of school administration include, financial administration, personnel administration, student administration, curriculum management, record management, maintenance of facilities just to name a few.

The administrative duties in secondary schools have become quite enormous and complex. With the complexity of secondary schools in the urban and rural areas in terms of enrolment, individual differences, infrastructural and financial difficulties, the school head is bestowed with a heavy task of management (Wemba, 2020). These administrative demands can only be carried out effectively through administrative process that is characterized by the use of Education Management Information System (EMIS) in the areas of organized data processing, information storage and retrieval system among others. Due to the complexity of the administration of secondary schools today, many ICT facilities have been integrated into the school system to make the administration efficient and effective. School managers who used to spend large amount of time in solving complex allocation problems (e.g., staff allocation, resource allocation, timetabling) and monitoring the school operations have now better options due to enhanced technology. (Ejimofor & Okonkwo,2022). Educational administrators and managers need to acquire a good mastery and skills of Education Management Information System in order to be up-to-date and meet up with the growing challenges of the new digital society.

This research work will constitute five main chapters. Chapter One is the background of the study, problem statement, statement of the research objectives questions, and hypotheses, the scope of the study, relevance of the research to the educational community and operational definition. Chapter Two, the review of related literature. Chapter Three, research methodology. Chapter Four will contain presentation and interpretation of results, and Chapter Five will be the discussion of the results with conclusion and propositions as recommendations.

Background of the study

Historical background

Limbe commonly known as the town of Legendary Hospitality was founded over 150 years ago by Alfred Saker, a British missionary, who dubbed it Victoria in 1858. It was renamed Limbe in 1982 by a presidential decree after River Limbe. It is the Administrative Headquarters of the Fako Division of the Southwest Region of Cameroon with an estimated population of over 120.000 inhabitants and it is divided into three subdivisions: Limbe I, Limbe II and Limbe III. (http://www. limbecity.org). Though the Isubu and the Bakweri tribes are indigenous to Limbe, over the years the city has emerged as a central pot in which all the different ethnic and cultural diversity that Cameroon prides in, live together in peace and unity – Cameroon in miniature. Historically, the Limbe municipality is very rich when it comes to secondary education. During the colonial era, secondary education in Limbe Municipality was influenced by the educational policies of the colonial powers. The establishment of secondary schools in the area can be traced back to this period when European missionaries and colonial administrators introduced formal education systems. The Baptist mission educational system during the colonial era in Cameroon for instance, could be situated in the then British Cameroon, extending between 1922-1945 (Weber, 1993).

The Saker Baptist college in the Cameroon coastal town of Limbe is the footprints of missionary educational activities in Camerron. During the colonial period, Limbe was the site of a number of prominent educational institutions, including the prestigious Saker Baptist college created in 1962. (Tripadvisor) It was the first secondary school in the Limbe municipality. St Joseph college Sasse though created in Bojongo, Buea in 1937, in the Fako division was the first secondary school created in Cameroon. Education during the colonial era was highly contextualizes in the spirit of evangelism. (Ibid in Edwin) In 1960, Limbe became part of the newly independent Republic of Cameroon. Since then, there has been a significant expansion of secondary education in Limbe Municipality. A Ministerial Decree of October 1975 created the first and the only

Government Secondary School in Victoria (now Limbe). It started as Government Secondary Grammar School (GSGS) Victoria. The name was later changed to Government Secondary School (GSS) Victoria and then Government High School, Limbe in the year 1981. The introduction of EMIS in the secondary schools in Limbe marked a turning point in administrative activities in the late 1990s and early 2000s. Before the introduction of EMIS school records were primarily maintained manually using ledgers and paper files. EMIS was further upgraded to include features such as online registration, fee payment, and examination management. these additions streamlined administrative processes even further, reducing manual workloads and minimizing errors. More recently, EMIS has been integrated with other digital platforms such as Google Classroom, Distant Learning (MINSEC) to facilitate remote learning during school closures caused by the COVID-19 pandemic. This integration has allowed for seamless communication between teachers, students, and parents while ensuring continuity of education.

Theoretical Background

This investigation will be guided by the theory of Diffusion of Innovation developed by Rogers in 1962, Lazy User Model (LUM) and the System theory.

Diffusion of Innovation was developed by Rogers in 1962. The theory postulates how, and at what extend new ideas and technology spread. For Rogers (2003), adoption is a decision of "full use of an innovation as the best course of action available" and rejection is a decision "not to adopt an innovation". Rogers defines diffusion as "the process in which an innovation is communicated through certain channels over time among the members of a social system" As expressed in this definition, innovation, communication channels, time, and social system are the four key components of the diffusion of innovations. Rogers (2023) further ascertain that people, as part of a social system, adopt a new idea, behaviour, or product. It has been adopted for this study because of the relative advantage an innovation offers over the exiting practices of a school administrator. School administrators may be more willing to use EMIS if they are conscious of the significant advantages improved efficiency in administrative tasks, decision making and improved data management as well.

This study also used the Lazy User model. It was developed by Collan and Tetard (2007), who assumes that a user will prefer to complete a task or achieve a goal within the system with the least efforts. According to the model user has the tendency to choose the solution that least demand effort. (Collan and Tetard, 2007). It has been adopted for this study because, this model recognises that Education Management Information Systems should consider the needs of the

users and become simple interactive to the users for enabling effective use and adoption. In relation to the complexity of information needed in school administration, educational administrators need a user-friendly technology that demands less effort in utilisation and decision making. Administrative activities or tasks with the use of EMIS will be effectively and efficiently implemented successfully if Education Management Information System (EMIS) is more user friendly.

This research work also adopted the System theory approach. It was first introduced by a Biologist Ludwig von Bertalanffy in 1940 and furthered by W. Ross Ashby and George Bateson in 1956. The system theory is a conceptual framework based on the principle that the components and parts of a system can best be understood in terms of relationship with each other and with other systems rather than in isolation. General systems theory is the skeleton of science in the sense that it aims to provide a framework or structure of systems on which to hang the flesh and blood of particular disciplines and particular subject matters in an orderly and coherent corpus of knowledge" (Boulding, 1956,208). The System Theory and Education Management Information System (EMIS) are concepts that are closely related. The System Theory is a theoretical framework for dissecting complex systems in order to analyze and comprehend them. dividing things into smaller components and researching how they relate to one another. The EMIS is a device (system) that is used to collect, process, and send out educational data and information, which can also be considered as a complex system. The system theory is relevant in this study because it provides a framework to understand how various elements of the school interact with each other through EMIS. EMIS can collect information on student enrolment, attendance, academic achievement, and demographics. The System Theory can be used to analyse this data in order to comprehend how these various educational system components interact with one another and how modifications to one component may have an impact on other components.

Conceptual background.

Education Management Information System (EMIS) refers to a system used to collect, integrate, process, maintain and disseminate integrated set of relevant, reliable, unambiguous and timely data and Information to education leaders, decisions makers, planners and managers at all levels to perform their responsibilities to achieve the goals and objectives of education (Bhatti and Adnan, 2010). According to Hua and Herstein (2003), EMIS is a set of formalized and integrated operational processes, procedures, and cooperative agreement by which data and information about schools and schooling, such as facilities, teachers, students, learning activities and

evaluative outputs are regularly shared, integrated, analysed, and disseminated for educational decision use at each level of the educational hierarchy. Marcia and Kurt (2011) defined EMIS as a comprehensive system that brings together people, practices, and technology to provide quality education statistics in a timely, cost-effective, and sustainable manner, at every administrative level, and to support selected operational functions. In this study, EMIS will be defined as a set of formalized and integrated operational processes, procedures, and cooperative agreement by which data and information about schools and schooling, such as facilities, teachers, students, learning activities and evaluative outputs are regularly shared, integrated, analysed, and disseminated for educational decision use at each level of the educational hierarchy.

This definition has been adopted because of the fact that it lays emphasis on teachers, students and resource operational processes with the use of EMIS which is the ideal condition for Hua and Herstein (2003). Marcia and Kurt (2011), Bhatti and Adnan (2010) and Hua and Herstein (2003) all agreed on the fact that EMIS is a digital system that collects integrate data, process and disseminate information to enhance decision making in schools. MINEDUB has the best EMIS established as compared to the other education ministries in Cameroon, even though more is still supposed to be done for it to go fully operational as there is no big data server that cuts across all this ministry and they must rely on annual census for data collection and at times unreliable and untimely slowing down decision making at the ministry level. (UNICEF Cameroon Country Programme, 2018-2020). EMIS will be operationalised in this study as, Student Information System (SIS), Financial Information System (FIS) and Human Resource Information System (HRIS).

Barrett (1999) defines SMIS as “an integrated software package that maintains, supports, and provides inquiry, analysis, and communication tools that organize student accountability data into information to support the educational process”**.** Student Information system or Student Information Management System (SIMS) is a student-level data collection system that allows school to collect and analyse more accurate and comprehensive information, to meet the state reporting requirements, and to inform policy and programmatic decisions.

A Financial Information System (FIS) is a computer-based information system, that gathers, stores, and analyses the financial information which is further useful for the decision making. (www.javatpoint.com/Financial Information System) financial information system can have enormous advantages in financial management in schools by ensuring accountability and transparency of financial resources.

Human Resource Information System (HRIS) is defined as a system used to acquire, store, manipulate, analyse, retrieve, and distribute information regarding an organization's human resources. An HRIS is not simply computer hardware and associated HR-related software. Although an HRIS includes hardware and software, it also includes people, forms, policies and procedures, and data. (Kavanagh et al ,1990)

Contextual background

Student Information System is developed by using innovative web based software and database technologies for enhancing education by providing electronic platform in order to collect, record, analyse, report, disseminate, control, monitor and manage students' data related to education like enrolment, local or centralized exam entries, attendance, grades, transcript, report cards, behaviour, assignments, and so forth (Durnali, 2013). According to Abdul-Hamid (2014), EMIS enables schools to store, manage, and access student data, including personal information, academic records, attendance and grades. This feature helps administrators and teachers make informed decisions regarding student performance and progress. Student information management system is an important aspect in EMIS because it enables administrators to manage student records such academic performance, student enrolment student assessment and achievement, timetabling just to name a few. According to Eileen (2016), Student Information System handles every aspect of student data right from admission, class schedules, subject enrolled by the student, overall student performance, and personal information about the student. Regional concurs with Barrett (1999) that if registering students in courses, documenting grading, transcripts, results of student tests and other assessment scores, building student schedules, tracking student attendance are integrated in Student Information System, then Student Information System would directly influence administrators outcome since they will have to spent less amount of time for storing the student's data and spending little money on paper, files, and other stationary materials etc thus, it enhances administrative effectiveness in schools. Student Information Systems have helped improve student records management, and school improvement plans. These tools are reported to be useful for administrators.

According to The Journal (2000), "Administrators no longer need to run from classroom to classroom or search from file to file to get the information they need, as the system (PowerSchool) provides instant access to all student records with a simple point and click". The use of student Information System by administrators is very vital for an effective administration

leading to quality education which is in line with the Sustainable Development Goal (SDG) 8.2, which is aimed to achieve higher level of productivity through diversification, technological upgrading and innovations including through a focus on high level-value added and labour-intensive sector. Educational managers and administrators need to acquire innovative and technological skills in order to meet up with the growing challenges in education. UNECSO and the Global Partnership for Education (GPE) acknowledged EMIS's growing relevance and sponsored an International Conference on EMIS from April 11 to 13, 2018 in Paris, France. UNESCO and GPE aimed to develop a forum for nations to share their experience in the reinforcement of education data systems and explore prospective areas of collaboration through the International Conference on EMIS and the publication that resulted from it.

Continentally, CESA 16-25 came out with actions to achieve objectives by 2025 in order to fully reorient African education and training systems towards the achievement of the AU's vision and Agenda 2063. Some of the sub objectives of SO 3, is to Build capacities of education managers and administrators on use of ICTs in the planning, implementation, monitoring, strategies, and programs and provide appropriate and sufficient equipment facilities (e.g. connectivity, power) and services. However, with the appropriate and sufficient facilities, educational administrators need to make sufficient use of them in student record keeping, preparation of student report cards, timetabling just to name a few using a Student Information System to enhance administrative effectiveness.

In Cameroon, The Law of Orientation of Basic and Secondary Education (Law No. 98/004 of April 14, 1998) which is mostly based on the recommendations of the National Education acknowledges in general terms the potential contributions of ICT in education. It states in Section 25 (Part III) that "the education provided in schools shall take into account scientific and technological advancement and shall be tailored in terms of content and method, to national and international economic, scientific, technological, social and cultural trends". (Shaibou, 2017). Chitolie-Joseph (2011), in his study conducted in Caribbean, also discovered that EMIS is useful for maintaining students and staff records, keeping school accounts, preparing students' report cards, and timetabling. Cameroon has prepared school report cards across the country to capture information on student learning, but these are yet to be mainstreamed (UNSECO 2018) The status of Student Information System in public secondary schools in Cameroon has not been investigated, and its effect on administrative effectiveness in public secondary schools in Cameroon is unknown, the use of Student Information System in public secondary school in the Limbe II municipality has been low because school administrators rarely adopt efficient and

effective student data management technologies. However, there is limited literature related to the use of student information systems in educational administration in Cameroon secondary schools.

Financial Information System (FIS) is defined as a system that can accelerate the financial management processes, ranging from budgeting to the financial reporting process. (Hanaffi, 2017 in Yohana, 2022). According to UNESCO Regional, Financial Management Information Systems should comprise grants received, salaries paid, maintenance charges, fees collected, scholarships disbursed, expenditure incurred on welfare measures, such as the school lunch programme and money spent on enhancing school infrastructure. All the financial transaction records carried out by an educational institution such as payroll, fees collection, are captured by a Financial Information System. According to Alampalli (2013), a Financial Information System enhances efficiency, scope, and quality of studies applied to systemic regulation, and facilitates easy decision making for effective regulation. For the Financial Information System to work effectively and efficiently it should be complete. This means that it should consist of people, hardware, software and data. Without people, the system cannot work as people are the ones who run the Financial Information System. Hanaffi, (2017) agree with UNESCO Regional, that if financial management processes such as payroll, budgeting, grants received, maintenance charges, payment of fees embedded in a financial information system, then, principals would effectively and efficiently carry out their task related to finances thus enhancing administrative effectiveness in school.

The absence of Financial Management Information System in any school prevents good financial management thus preventing the programmes of secondary schools to be properly implemented. Good financial management leads to increase in the output of funds utilization and proper allocation of the funds. Schools, as organisations, have goals and objectives. To achieve these goals effectively the school funds should be managed properly (Zengele, 2013). And this can be done if school administrators integrate proper Financial Information System to enhance accountable and transparent transactions of the school. This falls in line with goal 16.5 and 16.6 of the SDG which is aimed at Substantially reduce corruption and bribery in all their forms and develop effective, accountable, and transparent institutions at all levels respectively.

A Human Resource Information System (HRIS) is a software containing a database that allows the entering, storage and manipulation of data regarding employees of a company. It allows for global visualization and access of important employee information. (Marcia, M). Hunan Resource Information System is an important aspect of EMIS because it integrates information like

employee details, pay roll, benefits, performance tracking and appraisal etc. Using HRIS in secondary schools enable administrators to keep more accurate and up-to-date records about teaching and non-teaching staff, allowing them to better prepare for future growth in their school. According to Gerardine DeSanctis (1986, 15), HRIS should comprise employee selection and placement, payroll, pension and benefits management, intake and training projections, career-pathing, equity monitoring, and productivity evaluation. Personnel Information Systems have evolved from the automated employee recordkeeping from the 1960s into more complex reporting and decision systems of late (Gerardine DeSanctis, 1986, 15). Sam and Donwilliams, (2023) concurs with Beadles et al (2005) that if E-Recruitment/Selection, Time, Labour & Database Management, E-Payroll Rewards, Compensations & Benefit Administration are embedded in a human resource information system (HRIS), then human resource information system (HRIS) would directly influence effective administration the school. But if secondary school lacks an effective administration of human resource policy according to Sam and Donwilliams, (2023) Indiscipline, unprofessionalism, absenteeism, a lack of employee engagement and unhappiness, as well as monetary and material losses, may become the norm of the school. EMIS has become an integral part of the global educational agenda.

Human Resource Information System enhances administrators record keeping of their employee's thus always informed of schools where there is lack of personnel's, which lies at the very heart of effort to monitor progress toward the world's development goals particularly the SDG 4.c which states that by 2030, there should be substantial increase in the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States. Human Resource Information Systems play a vital role in many businesses today, yet few studies have been conducted on HRIS in relation to other aspects of the HR functions.

Problem statement

Administrative successes recorded in various secondary schools in Cameroon cannot be in place without the integration or involvement of Education Management Information System. EMIS help to provide the necessary information to make decisions with the effectiveness and efficiency which leads to improved performance. (Tai, 2005). As showed already EMIS should exhaustively address the issues of Student information system, Financial Information System and Human Resource Information System. A SIS should provide administrators with students records on enrolment, attendance statistics, grading system and timetables. FIS should be able to carry out

payroll, fees collection, financial analysis and budgeting. Meanwhile Human Resource information system should be able to provide the school administrators the means to recruit or select staff, staff evaluation, staff communication just to name a few. If all these elements are integrated or incorporated into EMIS in a secondary school, it will enhance efficiency, data accuracy, improve decision making, improve optimal utilization of resources and enhance monitoring and evaluation thereby leading to administrative effectiveness.

Ellison (2004), ascertain that, EMIS in many developing countries can still be described as poor. Data dissemination is slow, some data are unreliable, the analysis of information and its input to developing better education policies are limited. According to '*Rapport d`Analyse des donnees du recensement scolaire2019-2020'*(2020), the annual growth rate of school going children stands at 2.3%, revealing an unproportional increase in demand for education at the secondary level. This enormous rise in demand for educational services has made administrative tasks in public secondary schools in Limbe municipality a complex one. Previous studies and personal observations has shown that, it is common to get problems like poor student and staff record keeping, poor accountability, delay in processing students' results and poor scheduling of courses/subjects leading to clashes in lesson timetables, embezzlement of school funds due to lack of control techniques, and a lack of an automated staff database profile that also prevents and delays employee rewards and timely promotion which leads to ineffective and inefficiency decision making by administrators. School administrators may be tempted to relax in creating a student database and adopt ad hoc decision making.

Thus, there have been an increase in the number of institutions experiencing administrative problems and cases of student riots pose the question whether school administrators do understand that ineffective use of data for planning as well as in their decision making on a regular basis influences their management (Ndiku et al, 2014). These difficulties perhaps may be because of the principal administrative officers' incapacity to use Educational Management Information System (EMIS) to streamline the operational processes in their respective schools. It is with this problem that the study is aimed at examining School administrator's use of Education Management Information System for administrative effectiveness in public secondary schools in Limbe municipality.

Objectives of the study

General Objective

The general objective of this study is to examine school administrators' use of Education Management Information System for Administrative effectiveness in public secondary schools in the Limbe municipality.

Specific objectives

Specifically, the study sought to:

1. Examine the extent to which Student Information System (SIS) is used for effective administration in public secondary School in the Limbe municipality.
2. Investigate the extent to which the use of Financial Information System (FIS) enhances administrative effectiveness of public secondary schools in the Limbe municipality.
3. Assess the extent of the use of Human Resource Information System (HRIS) for administrative effectiveness in public secondary schools in the Limbe municipality.

Research questions

Research questions are interrogative statements that narrow the purpose to specific questions that researchers seek to answer in their studies. According to Creswell (2012),

General research question

To what extend does school administrators' use Education Management Information System for Administrative effectiveness in public secondary schools in the Limbe municipality.?

Specific research questions

The following specific research questions guided the study:

1) To what extent is Student Information System (SIS) used for the effective administration in public secondary schools in the Limbe municipality?
2) To what extent is Financial Information System used to enhance administrative effectiveness in public secondary schools in Limbe municipality?
3) What is the extent of the use of Human Resource Information System on administrative effectiveness in public secondary schools in the Limbe municipality?

Hypotheses

Ho1: There is no significant relationship between the use of Student Information System and effective administration in public secondary schools in the Limbe municipality?

Ho2: Financial Information System does not significantly enhance administrative effectiveness in public secondary schools in the Limbe municipality?

Ho3: There is no significant relationship between Human Resource Information System and administrative effectiveness in public secondary schools in the Limbe municipality.

Relevance of the Research study

To the policy makers:

The findings of this research will be of interest to educational or school policymakers. Managers will be exposed and informed about the development of EMIS that can improve the efficiency and effectiveness in planning, monitoring, evaluation, and decision making of public secondary schools. Managers in the ministry, regional and divisional delegation of secondary education will be guided as to what could be the successful EMIS which can lead to the better success in management of secondary schools and the educational system in Cameroon thus working towards attaining the development goals.

The finding provides good information for education sector management and other decision makers for monitoring ESDP & SDG goals and planning.

To secondary school administrators:

This study is significant to the school administrators in that, administrators will be guided on the importance of EMIS in administrative duties and to what kind of EMIS that will be effective in the running of school administration. It will help school administrators to identify the difficulties in using EMIS for administrative effectiveness and how to ameliorate them. EMIS also serves as a guide to administrators in the management of financial and non-financial resources and activities such as budgeting, accounting, financing, students, enrolment, results processing, communication and reporting just to mention a few in their educational institutions for effective and efficient administration in order to overcome the challenges in administration.

To researchers:

This study is a relevant resource for interested bodies who want to invest on EMIS.

This work is also significant for it contributes to educational administration and technologies. It can encourage researchers to do further carry out investigation not only in the Limbe municipality but other parts of Cameroon and the world at large which will in turn fill the current gaps in practical literature in the field of study.

The scope of the study

Geographical coverage

Due to time, financial and range constraints, this study will be limited to the Limbe municipality of the Southwest region of Cameroon. There are both private and public secondary schools in the Limbe municipality, but this research work will be carried out only in the public secondary schools in the Limbe municipality.

Content coverage

I have delimited this research work only in my study area which sorts to investigate the use of EMIS by school administrators for effective administration in public Secondary schools in Limbe. Here only EMIS use for student, Human resource and management of Finance will be investigated. Though limited to this scope, the work does not deny the fact that it can be generalise to other themes and domains.

Operational definition of terms

Education

Education comes from the Latin word “educare”, the action of educating, training, instructing someone. Education is an essential process in human development. According to Adesemowo and Sotonade (2022), education is the act or process of educating or applying discipline on the mind or a process of character training. Education is expected to affect or condition the social behaviour of the person being educated.

Information

Information refers to data that have been converted into a meaningful and useful context for specific end users. Thus, information is generated through the transformation of data (Al-Mamary and Aziati, 2014).

Educational management

Educational management refers to the application of theory and practice of management to the field of education or educational Institutions. Educational administration is a process of acquiring and allocating resources for the achievement of predetermined educational goals (Ibrahim, 2017).

Administrator:

According to Mbua (2002) "An administrator is someone who carefully and systematically arranged or organized and use human, finance and material resources, and programmes to achieve educational goals" or the arrangement of human, financial and material resources and programmes available for education and carefully using them systematically for the achievement of educational objectives. In other words, an administrator is the essentially an organizer and implementer of plans, policies and programmes meant for specific educational objectives.

Educational Administration

Mbua (2002) defines educational administration as "the arrangement of human, material and financial resources and programmes available for education and carefully using them systematically for the achievement of educational objectives".

Education Management Information System

An EMIS can be defined as the ensemble of operational systems and processes – increasingly supported by digital technology – that enables the collection, aggregation, analysis and use of data and information in education, including for management and administration, planning, policy formulation and monitoring and evaluation (M&E). This definition insists on the systemic nature of EMIS, a fact which is often overlooked in efforts to reinforce government information systems (UNESCO,2018).

Information and Communications Technology (ICT)

The term denotes any communication device or application, encompassing radio, television, cellular phones, computer and network hardware and software, satellite systems, as well as the various services and applications associated with them, such as videoconferencing and distance learning.

CHAPTER TWO

LITERATURE REVIEW

A literature review is a written summary of journal articles, books, and other documents that describes the past and current state of information on the topic of your research study. It also organizes the literature into subtopics and documents the need for a proposed study. In the most rigorous form of research, educators base this review mainly on research reported in journal articles. (Creswell, 4th ed)

This chapter will be presented under the subtitles: Conceptual Framework, Theoretical Framework and Empirical Review.

Conceptual Framework

A conceptual framework according to Creswell (2018) provides the underlying structure and organization for a research study. It consists of interlinked concepts that form the basis for understanding a problem being investigated.

Components supporting EMIS.

EMIS concept is an adoption of Management Information System (MIS). EMIS is MIS applied to Education management. An Education Management Information System (EMIS) normally consists of several key components that work together to streamline data collection storage, analysis and disseminate information.

An Information System (IS)

An Introduction System (IS) is a set of interrelated components working together to collect, process and output information to support decision making and improve day-to-day operations in an organisation. (Chi, 2020). An information system (IS) is a set of interrelated components that collect, manipulate, store and disseminate information and provide a feedback mechanism to achieve a goal. The feedback mechanism helps organizations achieve their goals by increasing profits, improving customer service (Stair et al 2008), and supporting decision making and control in organizations (Laudon,2012). An information system is a collection of activities, procedures, methods, technology, and peoples that are organized to get the valuable elated data and information (Antwi and Gideon 2019). A good system is one which capable of process related data, store and disseminate information to its end users. Kroenke (2007) further explains that Information System is a set of components which interact to produce information, which include

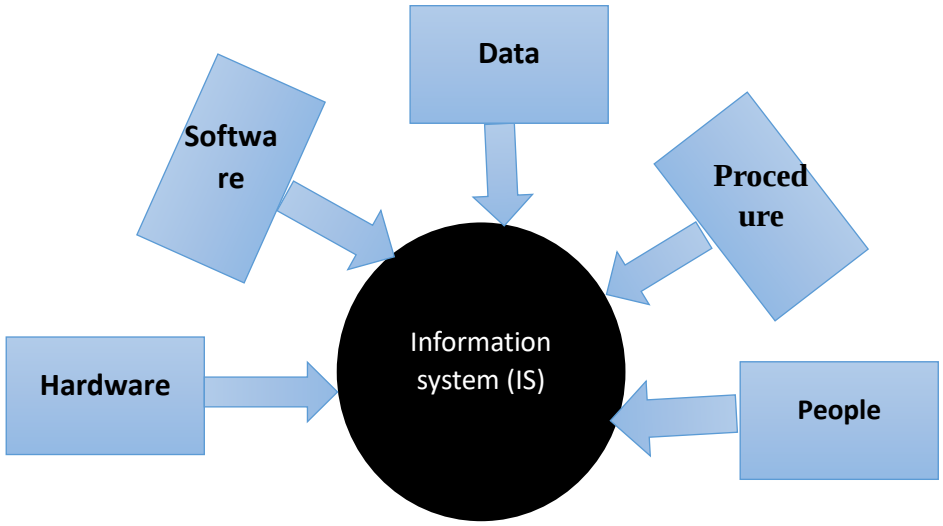
hardware, software, data, procedures, and people, whereas these components can be found in every information system. Information system means a system of communication between people (Kroenke, 2007; Davies, 2009).

Component of information system:

- **Hardware**: physical devices that make up the system. it includes all the physical components used in inputting, processing, storing and communication of data.
- **Software**: programs used to handle the data. They include programs such as spreadsheet programs, database software etc.
- **People**: they are users of the information system. Users input data into the computer, give some directions to the computer to perform task and review information on the computer to perform task.
- **Data**: data is raw facts that the information system records

  Procedure: it involves how a particular data is processed and analysed to get results for which the information system is designed.

Figure 1. Five components of information system (IS)



Source (Kroenke, 2007, p5)

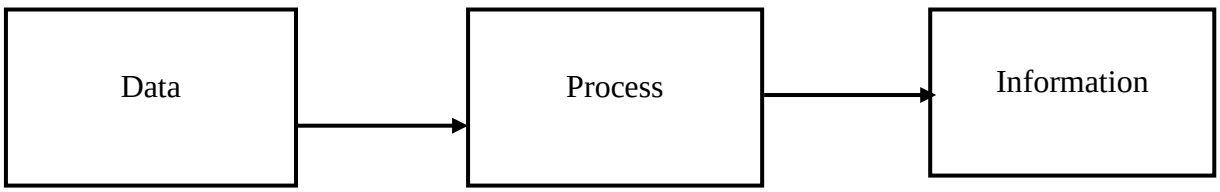
Management Information System in Education

Defining management information systems would first require splitting the subject into three themes of: Management, Information and Systems respectively. (Kumar et al, 2006).

Management is defined as a process to achieve organisational goals efficiently and effectively through planning, organising, directing and controlling organisational resources (Al-Mamary and Aziati, 2014). Okunamiri (2010) saw the term management as the scientific or systematic utilization of available human and material resources available in an organization to achieve organizational set goals and objectives. In an educational institution like Ignatius Ajuru management might imply the ability of the institutional managers to utilize all available natural (Arable-land, trees, rivers and streams, soil, sun, rain, etc)and human resources (staff, students, preachers, the ruling government, non-academic staff, host community leaders and dwellers etc), to achieve optimal development, academic excellence and competent institutional goal attainment.(Chigbu and Akor,2023)

- Information: Information is known as data that have been converted into a meaningful and useful context for specific end users. Thus, information is generated through the transformation of data (Al-Mamary and Aziati, 2014). Information based decisions are important to improve the efficiency in an education system (World bank 2015).

Figure 2. Conversion of data into information



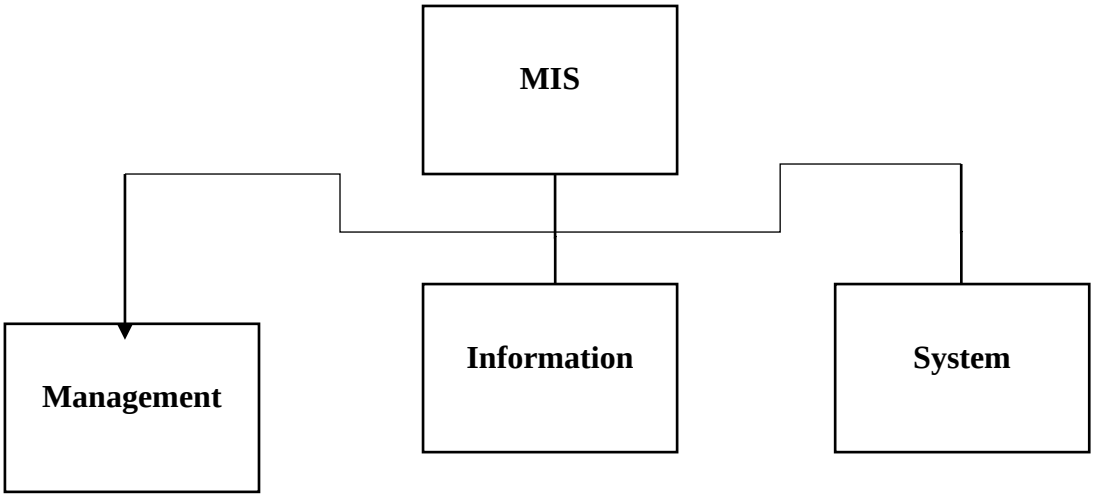
Source: (Al-Mamary and Aziati, 2014, p2)

-Systems

A system is a collection of elements or components that interact to achieve goals. The elements themselves and the relationships between them determine how the system works. Systems have inputs, processing mechanisms, outputs, and feedback mechanisms. A system processes the input to create the output (Stair et al 2008). Al-Mamary and Aziati (2014), defines a system as a set of

interrelated components, with a clearly defined boundary, working together to achieve a common set of objectives by accepting inputs and producing outputs in an organised transformation process. Kumar (2006) puts it that a system is a set of elements joined together for a common objective A system processes the input to create the output (Stair et al 2008).

Figure 3. **The Meaning of Management Information System (MIS)**



Source: (Al-Mamary and Aziati, 2014, p2)

Looking at these views, it is arguable that every system comprises parts, are interrelated and interconnected; becomes one entity and consequently pursues common goal. Drawing from the foregoing, it seemingly appears that defining MIS is now a simple task, but that is not exactly so. (Antwi and Gidean, 2019) Lucey (2005), in Antwi and Gidean (2019) averred that there is no universally accepted definition of MIS and those that exist reflects the emphasis and prejudices of the particular scholar that offers it.

This subject has adopted the following definition and views of management information system (MIS). Management Information System (MIS) can be seen as a database management system tailored to the needs of managers or decision makers in an organization. MIS is a system using formalized procedures to provide management at all levels in all functions with appropriate information based on data from both internal and external sources, to enable them to make timely and effective decisions for planning, directing and controlling the activities for which they are responsible (Argyris, 1991) MIS is basically concerned with the process of collecting, processing, storing and transmitting relevant information to support the management operations in any organisations (Ajayi and Fadekemi, 2007). MIS makes management operations easier to collect,

store and process the data and retrieve information easily when needed, which increases the efficiency of these companies (Al-Mamary and Aziati, 2014). In education, information is crucial for the purposes of managing, planning and even evaluating the education system. Therefore, MIS has been used in the field of education, adopted in all fields of knowledge and practice thus giving rise to EMIS (Akaranga, & Makau, 2016).

Characteristics of an Effective MIS

There are many characteristics discussed for an effective Management Information System in literature. (Cassidy and Creswell, 1997). Some of which shall be stated below.

- MIS system should be composed of integrated sub systems with the ability of forward and backward-looking systems.
- MIS system should be capable of planning and controlling the clearly defined business activities.
- MIS system should be capable of generating the reports that can help the management at all levels in planning and controlling all of their current and expected business activities.
- MIS system should be able to retrieve the information about the operations control at appropriate time and should allow the transactional data processing.
- For the timely response, MIS system should have the batch processing as well as interactive operational modes.
- In order to store the data that is being frequently accessed, MIS system should use all of the data protection procedures that can assure to authorize user in more protective way.
- To extract the relative information quickly, MIS system should have appropriate data storage medium like random or direct access storage.

For a system to generate the meaningful and affective output for the ongoing control operations, MIS system should enable the standard and custom-made model that must have the storage medium for the online data. Kenneth Hamlet (2002) asserts that effective management information systems possess a number of characteristics, including the following:

Relevance. This sort of data attributes is of reality. Although information can come in many different forms, the most important quality information needs to be pertinent to the issue under consideration. Examples are: reports, messages, arrangement just to name a few. The functions of

its relevance otherwise will primarily have the beneficial effect on the issue or requirements at hand. In the absence of quality pertinent, understanding of the message will become more challenging and may ultimately make dissatisfaction the client.

Accuracy. Information should be sufficiently accurate for it to be reliable by those in the management team and for the purpose for which it is intended. Though absolute accuracy may not be obtainable, yet the level of accuracy must be related to the decision level involved. In addition, accuracy should not be confused with precision. Information may be inaccurate but precise or vice-versa.

Time. Good information is that which is communicated in time to be used. The time of regular produced information is essentially important in this regard. In fact, information should be produced at a frequency which is related to the type of decision or involved. Details Information should contain the least number of details consistent with effective decision making. The level of details usually varies with the level in the organization.

Functions of MIS in education.

According to Achuonye (2004), Objectives of MIS especially in the field of teaching and learning include:

1. Data Capturing: MIS capture data from various internal and external sources of the school as an organization. Data capturing may be manual or through computer terminals. The data to be captured include schools' purchases, admission, student's enrolment, teachers/lecturers nominal roll, staff salaries, etc.

2. Processing of Data: The captured data is processed to convert into required information. Processing of data is done by such activities as calculating, sorting, classifying, and summarizing, which is vital to the effective functioning of any educational institution.

3. Storage of Information: MIS stores the processed or unprocessed data for future use. If any information is not immediately required, it is saved as an organization record, for later use. These may include student's evaluation results, copies of students claimed certificates, aggregation of student's academic records for purpose of transcripts.

4. Retrieval of Information: MIS retrieves information from its stores as and when required by various lecturers, students or the school administration (users). A nice example is the case where

students' payment details, bank tellers, receipts and academic results gets missing owing to rubbery, fire outbreak or misplacements, it is the MIS that can retrieve such delicate information.

5. Dissemination of Information: Information, which is a finished product of MIS, is disseminated to the users in the organization. It is periodic or online through computer terminal. This could be seen in areas as online publishing of student's results, admission list, payment requirements, matriculation and convocation dates and activities.

The concept of Educational Management Information System (EMIS)

The concept of EMIS can be explain as Management Information System that is applied in educational systems and school. According to (Abdul-Hammid, 2017). An Education Management Information System (EMIS), in its simplest form, can be defined as a system responsible for collection, maintenance, analysis, dissemination, and utilization of data in an education system. An Educational management information system (EMIS), according to Tegegne (2003), is a comprehensive system that brings together people, process, and technology to provide timely, cost effective, and user appropriate information to support educational management at whatever level is needed. An EMIS can be defined as the ensemble of operational systems and processes – increasingly supported by digital technology – that enables the collection, aggregation, analysis and use of data and information in education, including for management and administration, planning, policy formulation and monitoring and evaluation (M&E). This definition insists on the systemic nature of EMIS – a fact which is often overlooked in efforts to reinforce government information systems (UNESCO,2018). A comprehensive EMIS is defined as not only including administrative and pupil data, but also financial, human resources and learning data as well as data on graduates after the completion of their studies.

This information can and should be available, both at the individual and aggregate level, for policy-analysis and formulation, planning, monitoring and management at all levels of an education system. (Abdul, 2014). It is crucial for tracking changes, ensuring data quality and timely reporting of information and facilitating the utilization of information in decision-making. This very circumstance makes it one of the principal sources of data to monitor education sector plans, as well as SDG 4 commitment (UNESCO,2012).

Components of an effective EMIS

An EMIS must be able to respond to a variety of requests for education and development data, whether from national authorities, other national stakeholders, or development partners, in a timely and flexible manner for it to be complete. Importantly, EMIS ought to work with training and long-lasting learning framework advancement ready to stay up with and support development. and changes in the field of schooling. As a result, efficient EMIS are learning systems in and of themselves, capable of adapting to both current and future data requirements through ongoing dialogue with education planners and policymakers. In order to be effective, EMIS should have a research function that can support their evolution in light of changing demands through critical inquiry, including research visits to education stakeholders at the school level. Notwithstanding, while EMIS ought to be planned and adjusted to country settings and requirements, there are by and by certain qualities that are probably going to be available in all compelling EMIS. These are, as stated by the World Bank's Systems Approach for Better Education Results-EMIS (SABER-EMIS) Framework:

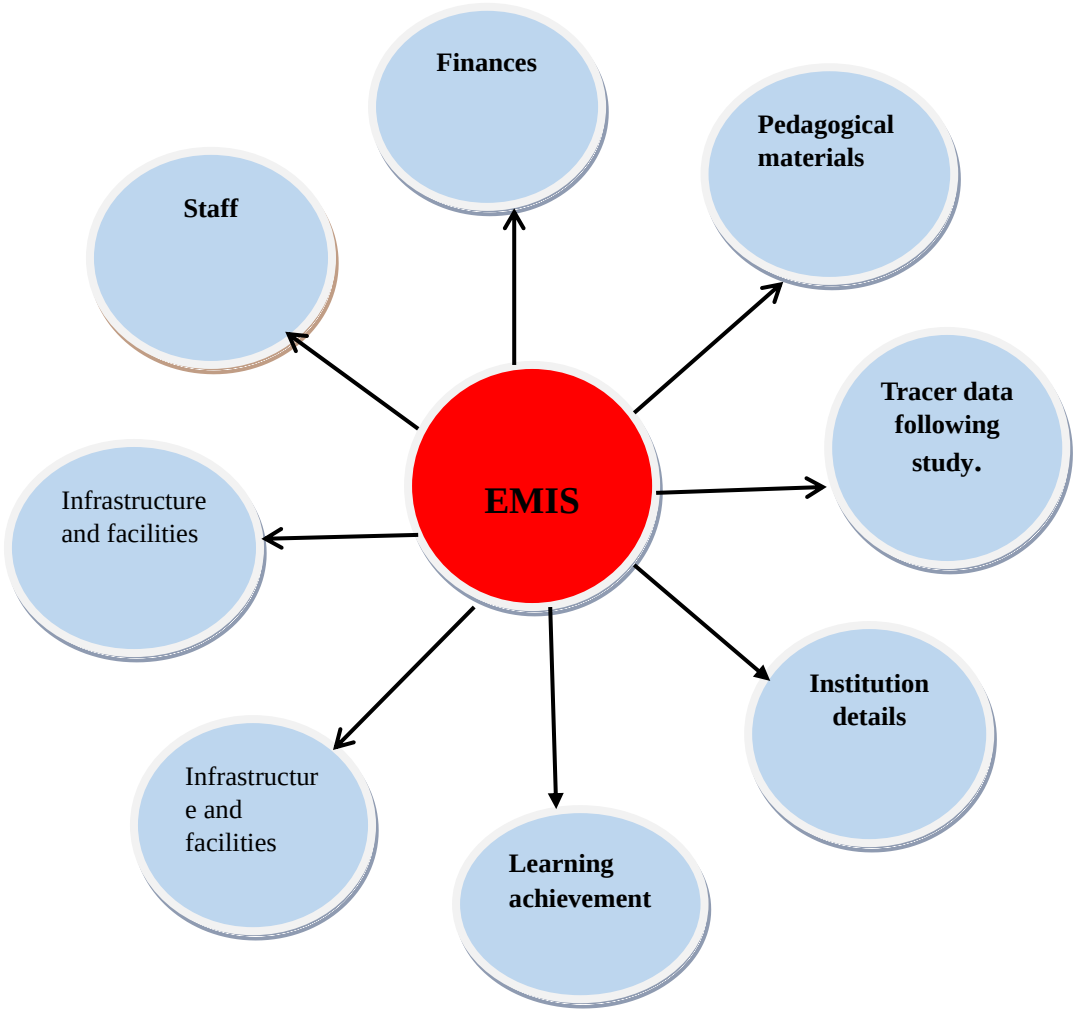
1. An information cycle. An efficient EMIS keeps track of inputs and analyses data in a way that enables education stakeholders to evaluate the efficiency of current policies and institutions. This starts a feedback loop that helps policymakers make decisions and actions. (UIS, 2017).

2 Data coverage. Effective EMIS maintain both raw data (e.g., payroll, staffing complement) and aggregate information (e.g., enrolment rate, completion rate, dropout rate). Aggregate information allows education actors to have a greater understanding of the education system and is therefore crucial to effecting policy and programme improvements.

3 Data use and effectiveness. Data produced by the EMIS should be readily understandable, usable, and actionable. According to UIS (2017), EMIS data serve not only statisticians but also other actors who have a stake in education-related policy and programmes. This enables the use of data for daily operations, target-setting, policymaking, and results monitoring, among others. As such, data can be used to determine priority improvements to the education system.

4 Multifaceted system. Effective EMIS do not exist in a vacuum (Abdul-Hamid, 2014; World Bank, 2015). For EMIS implementation to succeed, technology must be supported by institutional systems and structures that facilitate the collection, processing, and dissemination of data within organizations.

Figure 4: Elements of an EMIS covering all subsectors of the education sector.



Source: (UNESCO,2012, p82)

Objective of Education Management Information system (EMIS)

According to Mohammed, Kadir et al (2009), to the objectives of an EMIS are:

To improve the capacity for data processing, storage, analysis and providing education planners with timely data.

To facilitate the use of relevant information in decision making by planners at all levels.

To eliminate duplication of information for decision making.

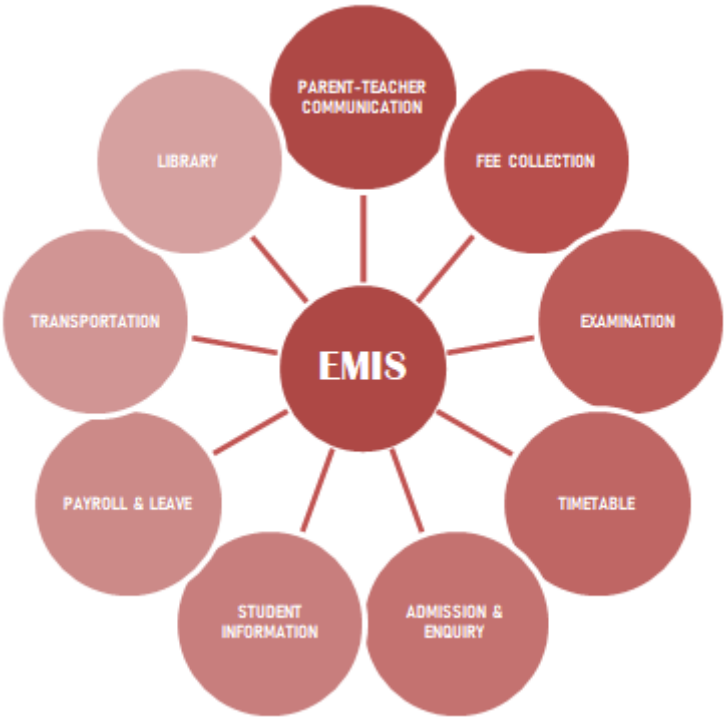
To streamline the flow of information and to provide information for policy dialogue.

Functions of Educational Management information system

Education Management Information plays an essential role in school administrative effective. EMIS has the following major functionality: (i) Maintains student records including biographies, attendance, achievement, discipline and accounts; (ii) maintains staff records; (iii) produces standard reports; (iv) keeps school accounts; (v) prepares student report cards and transcripts; (vi) tracks incidences and attendance and; (vii) performs scheduling and timetabling (Chitolie-Joseph, 2011). EMIS uses the data for assessing school performance, improving accountability, and managing resources. An effective EMIS is utilised in decision making by all users (parents, students, teachers, principals, and policy makers) across the education system to access school information. EMIS aims to help schools improve data collection, data and system management, and data use 38 in decision making (World Bank Group, 2017). EMIS is mainly used in financial and non-financial management of schools To be useful, EMIS data should be adapted and made accessible to all levels of decision making within the education system. UNESCO distinguishes three main levels of data use, which correspond to the tasks of three levels of education administration in most education systems (UNESCO, 2012). The higher the level of detail and disaggregation of information to use, the lower the level of decision-making, i.e., closer to the school level.

Across these three levels of decision-making, EMIS creates value in four distinct, but interrelated educational processes: 1. Management and administration; 2. Planning; 3. Policy formulation; 4. Monitoring and evaluation (UNESCO,2018). One of the most powerful tools to enhance the improvement of education performance is the Educational Management Information System (EMIS). This is because it enables decision makers to identify challenging areas, reduce operation costs and provide a systematic way of addressing challenges. If well implemented EMIS possesses the ability to raise educational awareness and monitor resource distribution by providing information to decision makers (Soh, 2000).

Figure 5. Functions of Education Management Information System.



Source: (Sonal,2021)

Criteria for effective Education Management Information Systems

The EMIS tool examines policy intent and the degree to which intended policies are effectively implemented on the ground. Intent refers to the way in which an EMIS and its overarching purpose are articulated by decision-makers and documented in policies and legislation, as well as standards and strategy documents. Assessing intent alone reveals only part of the picture. As such, the EMIS assessment also evaluates policy execution. Implementation refers to the degree to which policy intentions take place during the day-to-day activities of stakeholders at all levels of the education system. Based on extensive research and global evidence, the criteria for effective education management information systems according to (Dike, 2017) and (Nnachi, 2015) are:

Enabling environment: The enabling environment consists of the legal framework; organizational structure; and institutionalized processes, human resources, infrastructural capacity, and budget of the system. This includes both the laws and the policies surrounding an EMIS. In essence, this policy area is the context in which an EMIS exists.

System soundness. In a sound system the processes and structures of the EMIS support the components of an integrated system. Education data are therefore sourced from different institutions and all data feed into and comprise the EMIS. Databases within an EMIS should not be viewed as separate databases, but as part of the EMIS. Key aspects of system soundness include what data are covered in EMIS and how they come together in the overarching system.

Quality data. The processes for collecting, saving, producing, and utilizing information should ensure accuracy; security; and high-quality, timely, and reliable information for use in decision making. Data quality is a multidimensional concept that encompasses more than just the underlying accuracy of the statistics produced. It means that data is not only accurate but serves specific needs in a timely fashion.

Utilization for decision-making. An EMIS needs to be used across the whole education system to make decisions so that measures can be taken to improve educational quality. Accurate information on education sector performance enables the design of more informed policies and programs. It is imperative to understand where decision-making occurs, if the capacity to analyse and interpret education data exists, and if specific data is available to inform decision (Obrien and Marakas, 2007).

Student Information System

The use of a Student Information Management System is essential to education **(**Hualiang, 2015**).** In addition to significantly reducing the workload of the staff involved in the relevant activity, an effective information and performance management system's content is crucial to managers and decision-makers in schools. A student Information system enables educational institutions to perform various tasks more efficiently than traditional methods. It facilitates the registration of students for classes, creating timetables, tracking attendance, storing academic records like grades and assessments, managing student activities throughout their educational journey. According to Durnali (2013) Student Information Management System significantly affects management of secondary schools. A study in Union City School District in the USA showed that school-community relations was affected when computers were installed in schools and homes of teachers and parents. This led to improved messaging within stakeholders such as schools, parents, central decision makers and businesses thus fostering accountability, public support and connectivity (Demir, 2016). A study carried out by Ngoma (2009) was aimed to access the effectiveness of student information management system in Managing Student Performance in the state of North Carolina in the United States. The survey was conducted using semi structured

interview. Besides, a questionnaire was administered electronically to a group of 80 public school teachers and administrators for a return rate of 25 %. Respondents were selected in a systematically random fashion. From the findings, although many school districts are implementing Student Information Systems (SIS), there is little empirical evidence about whether SIS use can improve student performance.

Student Information System and administrative effectiveness

A Student Information System is an investment that an institution makes, but the investment is often returned and exceeded swiftly. Here are a few of the key benefits.

1. Administrative Efficiency

According to research, academic staffs spend around 5-10% of their work time on administrative tasks. Adding to this the fact that they spend 13% of their time keeping order in classrooms, educators are stripped of up to one-fifth of their teaching time every year. Not only do educational institutions lose teaching time to administration tasks, but they also have their administrators' time lost in tedious and laborious tasks. Time spent on administrative tasks comes at a high cost. In fact, a recent study by the University of Rome has revealed that the process of verifying diplomas costs the university more than $20,000 annually, corresponding to about 36 weeks of work. A Student Information System significantly reduces the time spent on those tasks.

2. A Smooth Student Experience

If you work in a Higher Educational Institution, you know that your students are your customers. A positive student experience provides the highest endorsement on educational institutions for peer references, which is arguably one of the most vital lead generation sources for your institution. Not many students will enjoy the necessary administrative processes a university requires. However, by providing a personalized portal for students to engage with at their convenience 24/7, students can stay updated on their online application progress, enrol online, pay tuition fees, receive class timetables, view their grades and progress online, or even raise a request — all without attending campus! Best of all, a leading SIS doesn't require an institution to re-enter information from scratch in each engagement, making the processes far quicker and more efficient than manual forms and disparate systems.

3. Valuable Insights for Decision Making

Like all powerful management systems, a Student Information System enables you to get more than just the job done. With a Student Information System, administrators' work is less about handling tedious paperwork, providing more time to complete 'value-add' activities to improve institutional efficiency and the students' experience. A Student Information System provides administrators and management with ample data-driven insights about students' demographics, attendance, academic performance, payment status, engagement, etc., enabling the enhancement of institutional policies and processes to continuously improve the student experience.

4. Managing Regulatory and Mandatory Requirements

Nearly all countries have a level of regulatory requirements for institutions to provide ministries and government departments with statistical information about their student population – a task that is becoming increasingly complex year after year. A leading SIS will support many of these requirements as a standard or provide the ability to extract information via inbuilt reporting tools allowing an institution to maintain compliance for data and audits — key for maintaining reputation within the sector.

5. Higher Learning Outcomes

Research shows that attendance in class is positively correlated with academic performance, explaining 11.8% of variations in academic performance. Student Information Systems, when linked with campuses' in-class tracking systems, enable real-time attendance tracking, helping educators stay on top of the student's attendance performance. The availability of this instant data can have a significant impact on students' commitment and performance. Not only does a Student Information System provide the source data required for student attendance tracking, but it also helps educators track their student's academic performance, providing alert mechanisms to trigger early interventions and ensure students stay on track.

Maki (2008) in a paper presented in Cyprus on ICT for administration and management of Cyprus secondary schools argues that the Cyprus Ministry of Education implemented a computer programme developed in Greece in order to manage information in secondary schools in relation to students and teachers' data. Schools in Cyprus use ICT for managerial purposes such as student management, (enrollment, absenteeism, grades, final exams), personnel management

(absenteeism), human resource management and timetabling. Despite the fact that student information systems play a vital role in school administration, schools have not always been early adopters of efficient and effective student data management technologies. Barrett (1999) observes that "Although the use of information systems to immediately access accurate and comprehensive information is critical for a successful business, schools often lagged behind in the implementation of information technologies".

Financial Information System (FIS)

A financial information system is a type of software used to input, accumulate, & analyse financial and accounting data. FIS support financial managers in decisions concerning, allocation & control of financial resource. Features of a good financial management system

- Keeping all payments and receivables transaction in schools.
- Keeping track of liabilities.
- Maintain income and expenditure statements, and balance sheets.
- Keeping all records up to date.
- Maintain complete and accurate accounts.
- Minimizing overall paperwork

Integration of ICT facilities in financial management in secondary schools

Finance plays a vital role in any organization for without finance no firm can survive for a long run. Asemah (2010) states that financial management in schools simply imply how finances are raised in schools, the identification of sources of school finance, methods employed in its collection and how collected revenues are effectively applied to the school system to achieve the stated goals and objectives of the school. Thus, for a school to have an effective and efficient financial record keeping they need an integration technological tools like computer and other computer related devices. This includes soft wares (EMIS) as well as hard wares of computers. Blandford (1997) pointed out that the computerization of accounts system could help in maintaining the records accurately, systematically and timeously. Blandford further stated that such systems can help track money owed to the school, generate receipts for all money collected, authorize valid payments; provide accurate, up-to date financial information on budget commitment and actual expenditure. and produce financial statements and other statements

needed by schools to meet their statutory obligations. Similarly, Ololube, Ubogu, and Ossai (2007) stated that introduction of ICT usage and its integration has initiated a new age in educational methodologies. ICT equipment is used widely for preparation and maintenance of payrolls system. It has the potential in terms of time saving, accuracy, legibility, data storage, record check, and amenable for further data analysis, comparative statements, task calculations, and preparation of summary reports.

A study conducted in Tanzania by Muema, F (2015) to explores ICT integration in school financial management with a view of understanding the role it plays in enhancing the quality of educational management, reveal that ICTs facilitate management of finances in a number of ways;

- ICTs facilitate financial transactions and the use of money.
- Enhance budgeting and budget control and reduce chances of fraudulent loss of school funds.

Blandford (1997) affirms that spreadsheets facilitate financial management. According to the finance manager, parents telephoned or visited the school to know fees balances which they then paid at the bank and brought the banking slips to the school for receipting. EMIS includes financial data such as budget and revenue spending, cash transfers and subsidies, and unit cost per student. EMIS also enables schools to manage human resource data. This entails staff general demographics, salaries, performance evaluations, and professional development (World Bank Group, 2017). A good EMIS supports adequate reporting, policy decisions, fiduciary responsibilities, and preparation of auditable financial statements for the Education System.

An effective EMIS can include modules for general ledger, budgetary accounting, accounts payable, accounts receivable, payroll system, budget development; procurement; project ledger; and asset management. It is important to capture all financial contributions to the school as well as to record the expenditure along expenditure budget lines. It is important to understand what funds the school receives and how it expends funds. This will allow proper analysis of the school's financial management (RMSA-TCA, 2015). EMIS plays a significant role in helping education policymakers, decision-makers, and managers to make timely and good decisions. CT equipment can be tremendously helpful in maintaining financial records. The electronic spreadsheet software is very useful for administrators in recording and analysing the financial data of the educational institutions. It has been found that a computer system compared to a manual system produces more accurate student, personnel, and financial records. Blandford (1997) pointed out that the computerization of accounts system could help in maintaining the records accurately,

systematically and timeously. Blandford further stated that such systems can help track money owed to the school, generate receipts for all money collected, authorize valid payments; provide accurate, up-to date financial information on budget commitment and actual expenditure and produce financial statements and other statements needed by schools to meet their statutory obligations. In most Cameroon secondary schools school fee payments are done in the banks through a financial management system, and receipts are printed out for the parents to validate in the school campus.

Human Resources Information System (HRIS)

A human Resource Information system (HRIS) is software containing a database that allows the entering, storage and manipulation of data regarding employees of a company precisely and educational institution. It allows for global visualization and access of important employee information." (Marcia, 2011). According to Hedrickson, (2003), "HRIS can be briefly defined as integrated systems used to gather, store and analyse information regarding an organization's human resources". It integrates information like employee details, pay roll, benefits, performance tracking and appraisal etc. Technological advancement led to a lot of changes in HR Management. The storage of data was now shifted from manual ledgers and books to computer hard drives and magnetic tapes. Storage of data became easier, and a lot of manual work was removed. Human Resource Information Systems (HRIS) have drastically evolved since they were first introduced more than 50 years ago—they have gone far beyond their original purposes of converting paper records into computerized databases. HRIS will help the organization (school) to effectively store employee data more securely and accurately. Recent developments in technology have made it possible to create a real-time information-based, self-service, and interactive work environment. Personnel Information Systems have evolved from the automated employee recordkeeping from the 1960s into more complex reporting and decision systems of late (Gerardine, 1986).

Administrators, such as the heads of educational institutions like the principals and vice principals, can use the human resource information systems (HRISs) as real tools to carry out tasks like payroll computation, electronic recruitment and selection, information dissemination and retrieval, information storage, etc., resulting in efficiency, effective time management, and financial efficiency, among other things. Secondary schools in Nigeria use ICT in supervision of staff personnel (Jacob, et al., 2020). Administrators use ICT to allocate duties to members of staff, both teaching and non-teaching. It is also used to manage teachers' leave days, appraising teachers and generally in collecting data of all members of staff. Performance appraisal of teachers is

important as it makes teachers to be more competent in their duties by reducing teachers' absentees, contributing to improved management of schools (Ekundayo et al., 2013). The study found out that, teachers who had taught for long period of time used computers and the internet more than those with less than 20 years of teaching. A survey conducted in 1998 (Ball, 2001) showed that 60 percent of Fortune 500 companies use the HRIS to support daily human resource management (HRM) operations. Sanaa (2008) conducted a study on the factors influencing the adoption of HRIS among private enterprises in Yemen. The researcher discovered that HRIS adoption increased employee morale by making an organization more competitive, reliable, and cost-effective in its operations.

Hussein (2008) conducted a case study on "The role of Human Resources Information System in improving Management of Resources in the Public Sector at the President's Office- Public Services Management," it was concluded that, despite an appealing establishment level of computerization and Human Resources Information System adoption, the HRIS has not yet been successful in enhancing management of human resources in the public sector. Hanadi (2010) offered the study's findings, which showed that the four Jordanian mobile businesses' (152) respondents' use of HRIS in strategic human resources planning. Most of the study carried out on Human resource information system did not bring out the possibility of easing the administrative tasks of heads of secondary schools by using human resource information systems (HRIS).

Components of an HRIS

Kovach et al., (1999) presented the three major functional components in any HRIS by giving the model below:

Input ⟶ Data Maintenance ⟶ Output

The Input function enters personnel information into the HRIS. Data entry in the past had been one way, but today, scanning technology permits scanning and storage of actual image off an original document, including signatures and handwritten notes. The maintenance function updates and adds new data to the database after data have been entered into the information system. Moreover, the most visible function of an HRIS is the output generated. According to Kovach et al., (1999), to generate valuable output for computer users, the HRIS have to process that output, make the necessary calculations, and then format the presentation in a way that could be understood. However, the note of caution is that, while it is easy to think of HR information systems in terms of the hardware and software packages used to implement them and to measure

them by the number of workstations, applications or users who log onto the system, the most 25 important elements of HRIS are not the computers, rather, the information. The bottom line of any comprehensive HRIS have to be the information validity, reliability and utility first and the automation of the process second.

EMIS and Educational Administration and Management

The concept of educational administration

Administration is a process of planning activities and utilizing human and imperial resources with an aim of accomplishing goals and objectives of a particular organization or institution. It calls for the ability of the administrators to make the right decisions at the right time to fulfil the predetermined goals. (Tanyi,2023). Administration, according to (Ebot Ashu, 2018 and Mbua, 2003) can be defined as the process by which goals are achieved through collective and cooperative human effort in a suitable environment. This definition specifies four essential points: 1) Administration is a process that involves the manipulation of specific operations. 2) Administration is goal oriented. 3) A collective and cooperative human effort is required in administration, and of a suitable environment, where participants can maximise performance. The role of administrator involves a great deal of multitasking. You will work with teams, oversee the operations within your company, manage groups, coordinate with management and engage in planning according to the needs of your company. According to Mbua (2002) educational administration is "the arrangement of human, material and financial resources and programmes available for education and carefully using them systematically for the achievement of educational objectives". Educational administration is a process of acquiring and allocating resources for the achievement of predetermined educational goals (Kimani, 2011). Educational Administration broadly means running of educational institutions, which involves guidance, leadership, and controlling of the efforts of individuals in the achievement of the goals of the institution (Ebot Ashu, 2018 and Mbua, 2003). Educational Administration also involves the management of resources: human, material, and evaluation or appraising the result of educational efforts.

Functions of educational administration

Administrators have a main function to implement policies. Administrators in a school institution will include the principals, vice principal discipline masters. Administrators out of the school could be delegates of education, inspectors, or supervisors. The functions of school administration are group under the following headings: (Wirngo,2017)

1. Resource and programme planning and policy-making: This function implies that school administrators contribute to different capacities and different levels in the system, in the formulation of plans and policies for specific aspects of educational and school systems. The school administrator also helps in the interpretation and implementation of educational plans and policies at the regional, divisional and sub-divisional, local and school levels.

2. Recruiting and development of personnel: Usually this function is referred to as "school personnel administration". Most educational administrators identify and indicate the staff needs of the school or educational system, as well as the specific type of personnel needed to meet needs. The administrator also collaborates with the regional, divisional, sub-divisional or local school boards or Ministry of Education in making decisions related to educational personnel. Actually, in the school system, the school principal or the head teacher as the case may be ensures proper employment, placement use, motivation development, welfare and to some extent the professional development of the staff under his administration.

3. Provision and maintenance of funds and facilities: This function which is sometimes referred to as "school business administration" is one of the most crucial functions of a school administrator. Even though some educational administrations in some developing countries appear to have limited control over the funds, a very significant function of the educational administrator is to ensure that the funds and facilities are effectively and efficiently used and well maintained to achieve desired goals. 4. Improvement of instructional programmes Generally, school programme management constitutes one of the most important functions of the educational administrator. The ultimate goal of educational administration is improvement of learning and learning opportunities. The school principal (or head teacher) collaborates with the classroom teachers, students and inspectors or supervisors in the selection of appropriate curricular or school activities, choice of subjects, textbooks, work scheduling such as timetables, use of teaching facilities and aids, teaching methods or strategies and method of evaluating school and student progress.

5. Student personal services Most often this function is paid lip in some schools (in most lay private schools). The selection, placement, orientation, guidance and counselling of students and should constitute an important aspect of the educational administration. In fact, the educational administrator should also ensure that every student is given adequate opportunity and motivation to learn. The school authorities should encourage extra-curricular activities (groups, games, and students' council). Group dynamics should be encouraged so as to benefit from their advantage. Also, the school should ensure that adequate school services, transportation, boarding facilities, discipline, and civic orientations and adequate inter-personal relationships are also maintained.

Differences between educational administration and educational management.

The concept of educational management and educational administration are two terms that are often used interchangeably, but they refer to different aspects of the educational system. They are different in terms of their functions, scope, and focus.

Table 1: Comparison between Educational management and Educational administration

Basis for comparison	Management	Administration
Meaning	An organized way of managing people and things of a business organization is called the Management.	The process of administering an organization by a group of people is known as the Administration.
Authority	Middle and Lower Level	Top level
Role	Executive	Decisive
Area of operation	It works under administration	It has full control over the activities of the organization.
Applicable to	Profit making organizations, i.e. business organizations	Government offices, military, clubs, business enterprises, hospitals, religious and educational organizations.
Decides	Who will do the work? And how will it be done?	What should be done? And When is should be done?
Work	Putting plans and policies into actions	Formulation of plans, framing policies and setting objectives
Focus on	Managing work	Making best possible allocation of limited resources.
Key person	Manager	Administrator
Represents	Employees, who work for remuneration	Owners, who get a return on the capital invested by them.

Source: Ibrahim (2017).

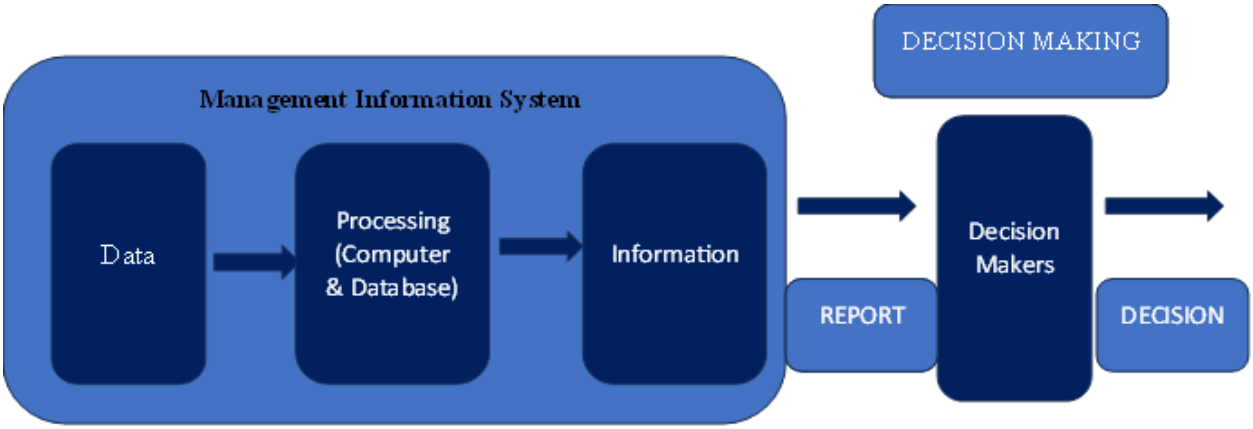
Education Management Information System and decision-making

Decision making in educational administration involves using data and information to make choices that significantly impact the processes and outcomes of an educational institution. Effective decision making depends on accurate data collection, processing and interpretation and implementation. An educational Management Information System integrated in decision makings for effective administration. According to (Moorty ,2019 cited in Nwankwo ,2020), MIS is a decision-making instrument used by top management comprising a set of controls. MIS, therefore, is a system that collects, processes, analyses, stores and disseminates information for educational planning and decision-making in the universities. Effective decision-making in institutions

depends to a large extent, on accurate, timely and relevant information available to the administrators. Relevant information for decision-making emerges from the proper data collection process which is the systemic approach to gathering and measuring information from a variety of sources to get a complete and accurate picture of an area of interest. The Sector Wide Approach to Education emerged in the forum in 2005 and initiated the Basic Education Sector Strategy specifying the road map to the achievement of the goals of basic education within stated periods (MINEPAT, 2006). Recommendations were made in these documents to the teaching of Information and Communication Technologies and the integration of educational technologies in the management of education. Educational technologies provide administrators with accurate data to help in the decision-making process.

Today school effectiveness is seen from the perspective of participative decision making which will normally take from the actual field situation to justify necessary decisions taken by the school leaders in the basic education sector. (Fon and Peter, 2023). Although it laid emphasis on basic education, secondary education is also involved in the decision-making process to enhance effective administration. Data needed for making structural for data in the decision making to be properly identified, quality determined, and efficiently used, school administrators need to evaluate the present situation to predict the future properly. This can only be accomplished if school administrators make appropriate use of educational technologies or EMIS in the secondary schools. When an Educational Management Information System (EMIS) is implemented and guided by a clear vision and strategic planning, it helps policymakers in decision making to produce quality results. However, most countries set their EMIS without a clear vision and a strategic plan which did not boost the efficiency awaited in the management and administration of their schools. To assess the progress towards policy goals, an effective EMIS is required to assess the progress towards policy goals.

Figure 6. Relationship between Management Information Systems and Decision-Making



Source: (Al-Mamary, Shamsuddin and Aziati,2014)

The government of Kenya recognizes the crucial importance of good statistics for evidence-based decision making in planning and policy formulation. It also recognizes the central role played by statistics in supporting implementation of polices, in particular monitoring and evaluation. This in turn aids transparency and accountability. In addition, an effective EMIS provides the necessary conditions for monitoring and evaluation. It facilitates the measurement of achievements made towards international commitments mainly Millennium Development Goals (MDGs) in education and for All (EFA). The introduction of an EMIS has not necessarily led to increased or more effective use of quantitative data in planning and program evaluation (Chapman, 1991a). The main purpose of an EMIS is to integrate information related to the management of educational activities, and to make it available for the decision makers, as well as the other parties, to use in helping them to make the correct decision (Connal, 2005).

EMIS use for decision making.

Various users of the system use the EMIS fully to make decisions at various educational levels. To take action to raise the standard of education, an EMIS must be used. The creation of better-informed plans and programmes is made possible by accurate data on the performance of the education system. It is critical to comprehend the processes involved in decision-making, whether it is possible to assess and interpret educational data, and whether certain data is available 66 to support decisions. "The development of the education system is more limited by a lack of knowledge and skills to use data and information than it is by a lack of knowledge and skills to use EMIS" (Cassidy 2006, 19). For this reason, it's critical to comprehend how an EMIS is used.

1. Openness: Education stakeholders have access to the EMIS, if they are aware of it and have the ability to use it. Although policy makers and school customers are the main users of an EMIS, other education stakeholders also profit immensely from and find many applications for the data generated by an EMIS. This lever shows how frequently and widely an EMIS is used by its users.

2.Operational use. Data produced by the EMIS are used in practice by the main education stakeholders. An EMIS should theoretically be the “primary source of operational management data” for the education system (Spratt et al. 2011). This lever evaluates the contexts in which EMIS data is used in practice.

3.Effectiveness in disseminating results. The dissemination of education statistics via a management information system is strategic and effective.

4.Accessibility. According to the World Bank (2013d), education statistics are easily comprehensible and distributed to various education stakeholders using a well-defined platform that offers assistance to users. This section looks at the presentation of education statistics and aims to create a system where data are exhibited in an easy-to-understand format, disseminated through suitable channels, and made available without bias.

Administrative effectiveness

The ability of an administrator to accomplish the aims and objectives of the organization is referred to as administrative effectiveness. In relation to the school system, Akinola (2013) asserted that it is the extent to which the set goals or objectives of a school programme are accomplished. Today's successful implementation of the educational policy statements and school objectives depends on effective school administration. Actuality, without successful adoption and implementation of EMIS, there cannot be growth, sustainable development, or meaningful/purposeful activities in the school. School administration look at the effective allocation, supervision and organization of school resources to realize the objectives of the educational institutions (Ogunode, Ahmed, Gregory, Abubakar 2020). The objectives of school administration according to Gounod, Ahmed, Gregory and Abu-Bakr (2020) include to plan the educational programmed, to design policies to direct the implementation of educational programmed, to organize curriculum for the school, to eliminate educational waste, to ensure effective allocation of education resources, to ensure effective supervision of educational resources and to ensure delivery of quality education. Administration is a social process concerned with identifying, motivating, controlling and unifying formally and informally organized human and material resources within an integrated system designed specifically to accomplish predetermined goals (Aguba, 2013).

Effectiveness is the ability to plan, organize and coordinate many and often-conflicting social energies in a single organization so adroitly (Adams 1963), cited in Besong (2001). Ipaya (1996) cited by Besong (2001) noted in his study of effectiveness, that effectiveness is a part of function assumed by someone, a set of specific responsibilities, assumed by a professional in a setting. Obano and Ogunbiyi (2021) in a study, define effectiveness as the degree to which desired effects are produced or the level of goal achievement attributable to teaching. The quest for achievement of secondary school administrative effectiveness may require specific management techniques at the secondary school level. In the context of this work, secondary school effectiveness involves administrators use of effective utilization of information and communication technology resources

(EMIS), so as to improve on the quality of secondary education to meet the growing demands of the society. A secondary school principal is the manager and chief executive of the school and the key person in ensuring that the students receive quality school experiences by making efficient use of both human and material resources. (Ejimofor & Okonkwo,2022). Some major tasks of the school principal are to interpret national policies, execute curriculum programs, committed to students, teachers, and support staffs' welfare, equipping physical facilities and finances, inducting and retaining school community relations (Visscher, 2003).

The roles of principals is viewed by Nwaka (2010) as supervision of instruction, curriculum development and evaluation, school community relationship, staff personnel administration, student personnel administration, management of school finance and school physical facilities.

1). Role as a Teacher Evaluator: Most principals also handle evaluating their teachers' performance following district and state guidelines. An effective school must have effective teachers and the teacher evaluation process is in place to make sure that the teachers in your building are effective. Evaluations should be fair and well-documented point out both strengths and weaknesses.

2). Role in Student Discipline: A large part of any school principal's job is to handle student discipline. The first step to having effective student discipline is to make sure that your teachers know what you are expecting when it comes to student discipline. Once they understand how you want them to handle it, then your job becomes easier. The discipline issues you deal with mostly come from teacher referrals. There are times when this can take a large part of the day.

3). Role in Developing, Implementing, and Evaluating Programs: Developing, implementing, and evaluating the programs within the school is another large part of a school principal's role. A principal should always be looking for ways to improve the student experience at school. Developing effective programs that cover a variety of areas is one way to ensure this. It is acceptable to look at other schools in the local and to implement those programs within the school that have proved to be effective elsewhere.

4). Role in Reviewing Policies and Procedures: An individual school's governing document is its student handbook. A principal should have their stamp on the handbook. A principal should review, remove, rewrite, or write policies and procedures every year as needed. Having an effective student handbook can improve the quality of education your students receive. It can also make a principal's job a little easier. The principal's role is to make sure students, teachers, and

parents know what these policies and procedures are and to hold each individual accountable for following them.

5). Role in Schedule Setting: Creating schedules every year can be a daunting task. It can take some time to get everything to fall into its proper place. There are many different 86 schedules which a principal may be required to create including a bell schedule, duty schedule, computer lab schedule, library schedule, etc. Cross-checking each of those schedules to ensure that you are not putting too much on any one person at once can be difficult.

6). Role in Parent and Community Relations: Having good relations with parents and community members can benefit principals in a variety of areas. If he has built trusting relationships with a parent whose child has a discipline issue, then it makes it easier to deal with the situation if the parent supports the school and principals' decision. The same holds true for the community. Building relationships with individuals and businesses in the community can help schools tremendously. Benefits include donations, personal time, and overall positive support for your school. It is a vital part of any principal's job to nurture their relationships with parents and community members.

7). Role in Delegating: Many leaders by nature have a hard time putting things in others' hands without their direct stamp on it. However, there is so much that has to be done, that it is vital that a school principal delegates some duties as necessary. Having people around whom the principal trust implicitly will make this easier. An effective school principal simply does not have enough time to do everything that needs to be done by themselves. They must rely on other people to assist them in getting things done and trust that they are going to do the job well.

Educational leaders (administrators) should have the following responsibilities: establishing a vision for the academic success of students based on high standards, creating a friendly and comfortable environment that enables the implementation of education establishing harmonious interactive cooperation and conditions, developing a harmonious leadership that allows teachers and students to understand their responsibilities as a realization of school vision, managing collaborators, data and processes to improve school quality. (Rudolf, Marthen &Izaak,2017)

For a school to achieve effective administration, the following subsystems must operate on a set of rules or procedures that the staff follows when completing a certain kind of internal activities. (Oluyemisi,2015) They include a) Reporting Subsystem b) Planning Subsystem c) Document Processing Subsystem d) Knowledge Management Subsystem e) Communication Subsystem f)

Decision making Subsystem In a study conducted by Akinyemi, Tolulope Ajayi and Issac ,2020, observed that school administrators had ineffective administration skills in managing schools, meeting deadlines, curriculum targets and delegating duties. According to Jenning (1996), "Finance is the backbone of any organization", and according to him, the success and failure and the effectiveness and ineffectiveness of any organization depends on the availability of financial resources." Adequate financing, therefore, matters a lot and it goes a long way to determining the success or failure of any administration. Therefore, such funds must be judiciously used or spent, and great care exercised to avoid misappropriation. The use of Education Management Information System (EMIS) in educational administration cannot be underestimated as it has significantly increased due to its efficiency and effectiveness. Therefore, in other for school administrators (principals) to be effective and efficient, Education Management Information System (EMIS) needs to be integrated in the educational system.

Theoretical framework

This section examines the models who seek to explain the worries put up in our research questions. In this study, three theories are selected to guide the findings: these are the innovation diffusion theory, Lazy User Model (LUM) and the System theory.

The Innovation Diffusion Theory.

The theory of Diffusion of Innovations (DOI) is the masterpiece of a communication scholar and sociologist Everette M. Rogers (1931–2004). It originated in communication to explain how, over time, an idea or product is stimulated and diffuses through a specific population or social system. According to Rogers (2003, p. 5), diffusion is "the process by which an innovation is communicated through certain channels over time among the members of a social system." Thus, diffusion is regarded as a special type of communication in which participants create and share information with one another in order to reach a mutual understanding. The end result of this diffusion is that people, as part of a social system, adopt a new idea, behaviour, or product. An innovation is "an idea, practice, or object perceived as new by an individual or other unit of adoption" (Rogers, 2003). Most of the new ideas according to the author are technological innovations. Rogers defines a technology as "a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome" Rogers (1995) orchestrated five decades of diffusion research and has selected five factors of innovations that are related with the adoption of innovations (Sonnenwald, Maglaughlin

and Whitton, 2001). Rogers et al confirming these attributes in domains such as medicine, engineering, and airline reservation information systems.

The five factors that influence adoption of an innovation are: relative advantage, compatibility, complexity, trialability and observability. These factors (attributes) are used as a theoretical foundation to evaluate collaboration technology. Rogers et al ascertain that, relative advantage innovation attribute, is the degree to which a new innovation surpasses current practices. Sonnewald et al (2001) has observed that CSCW applications often require additional work without providing obvious benefits. Relative advantage can be measured, in terms of variables such as, quality of work outcomes, added convenience, usefulness in accomplishing work goals and social prestige provided by the innovation. Integrating this theory with our focus on Education Management Information System (EMIS), we shall select questions for this scale from instruments measuring perceived system usefulness, credibility and use of information provided by EMIS to school administrators for effective and efficient decision making. School administrators play a vital role in the successful implementation and use of EMIS in secondary schools. As concerns the adoption of technological innovations such as EMIS, decision-making processes can remarkably affect administrative effectiveness and overall school performance.

Compatibility seeks to explain how consistent the innovation is with the values, experiences, and needs of the potential adopters existing values, past experiences and needs. It includes individual, group and organizational goals, needs, culture and structure. It is concerned with the agreement/differences between a group's traditional work patterns and the work patterns required by the innovation. CSCW research also stresses the importance of compatibility for CSCW applications.

Despite the differences with individual preferences and context, in terms of specific values, needs and work practices vary collaboration technology should, ideally, be compatible with fundamental or general values, needs and work practices. To measure compatibility, it needs to determine the satisfaction in the experiences with communication technology and user needs related to general system qualities, such as reliability and response time. Complexity refers to the perceived difficulties of learning to use and understand a new system or technology. (Fotoh 2022) When a system is perceived as difficult to understand, learn and use, it will not be adopted. Research in usability engineering (Sonnewald et al, 2001) emphasizes the importance of reducing complexity in human-computer interaction. The extent to which the innovation can be tested or experimented with before a commitment to adopt is made. It involves the degree of effort required

and risk involved in observing and participating in small scale demonstrations of the system, including easily recovering from operations using the systems and the costs involved in reversing the decision to adopt. Experimenting with and exploring system features is also a component of usability engineering.

Observability is the extent to which the innovation provides tangible results. Grudin (cited in Sonnewald et al, 2001) caution that users need to develop a clear understanding of collaboration technology before they will adopt it. Observability has been operationalized as "results demonstrability," that is, the ease of telling others the consequences or results of using information technology. Observability also includes visibility, that is, the degree to which the results of an innovation are visible to others.

Contribution of the theory

The Diffusion of innovation theory offers and examines the factors that should be acquired by new technology to permit its adoption in school administration. The Diffusion of Innovation Theory has been extensively used to understand the adoption and implementation of various educational technologies, including Education Management Information Systems (EMIS) in public secondary schools in the Limbe municipality. The diffusion channel plays fundamental role in administrative processes like decision making. Effective communication strategies are crucial in enhancing awareness and understanding amongst stakeholders. School administrators should use EMIS infrastructures to diffuse information to teachers, students, and parents for given that they make up a school which is a social system. The diffusion innovation theory in its perception of relative advantage also contributes to this study. According to this perception school administrators will likely implement an innovation if they perceive it to offer advantages over an existing practice. In other words, school administrators will adopt and implement EMIS over the manual system with the advantages it offers like improved data accuracy, streamline processes and enhanced decision-making capabilities leading to administrative effectiveness. This perception of the relative advantages to be obtained is also defended by the technology acceptance model TAM (Luis et al. 2020 in Fotoh,2022). The literature states that compatibility between IT and its users' values is determinant for acceptance and use.

Limitations of the theory

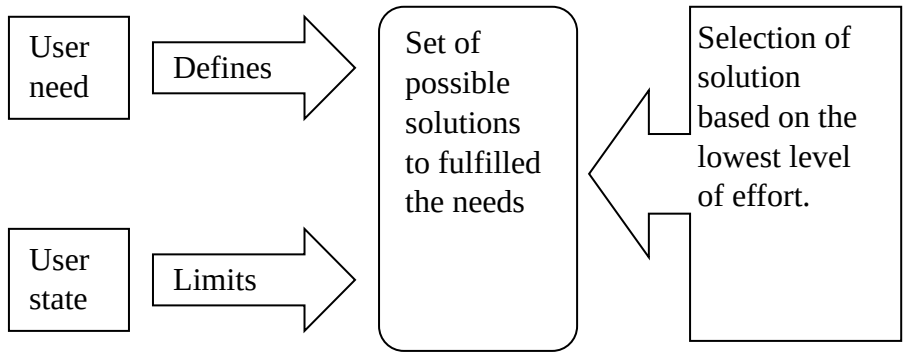
Wayne (2019) outlines the limitations of innovation diffusion theory as follows:

- Much of the evidence for this theory, including the adopter categories, did not originate in public health and it was not developed to explicitly apply to adoption of new behaviours or health innovations.
- It does not foster a participatory approach to adoption of a public health program.
- It works better with adoption of behaviours rather than cessation or prevention of behaviours.
- It does not take into account an individual`s resources or social support to adopt the new behaviour (or innovation).

Lazy User Model (LUM)

Collan (2007) presented the lazy user model (LUM) and was further developed by Collan and Tetard again in 2007 The philosophy of the model was to insist on the role of the user in the technology acceptance process where majority of the current popular models are technology focused. Lazy User Model takes the needs and characteristics of the user into consideration and even further sees them as the main players in the technology acceptance and perhaps choosing procedure. According to the LUM, a user is likely to choose the solution that demands the least effort (Collan and Tetard 2007; Collan and Tetard 2009). The LUM relies upon a parsimonious, Occam's razor approach suggesting technology users are lazy and will often select a solution to their problem(s) that is easiest for them to achieve. This principle of least effort that the LUM relies can be found in works on a variety of topics such as physics (Zipf 1949), linguistics (Cancho & Solé 2003), musical composition (Zanette 2006), and medicine (Reichle et al 2000). The user need is an "explicitly specifiable want", either tangible or intangible, that can be fulfilled completely" (Collan and Tétard 2009, p. 3). therefore, the user need defines the group of possible solutions that will solve a problem. The lazy user theory of solution selection ascertain that the user will choose the solution that requires the least effort. This demands that we describe what effort is and how we can order the amount of effort that different solutions require. efforts can be in the form of time used, money used, energy used (physical work, mental work), or a combination of all.

Figure 7. Lazy user theory of solution selection.



Source: (Frank and Mikael, 2009, p3)

Contribution of the theory

The lazy user model acknowledges the fact that EMIS should consider the needs of the users and become simple interactive to the users for encouraging effective use and adoption. Regarding the complexity of information needed in school administration, school administrators need a user-friendly technology that demands less effort to use and decision making. Educational administrators will effectively use and successfully adopt EMIS in administrative processes if it user-friendly. This can significantly improve and enhanced administrative effectiveness in secondary schools.

Systems Theory

Systems theory is an interdisciplinary field that studies systems in general, i.e., sets of interrelated components that work together to achieve a common goal. It is concerned with the principles that can be applied to any system, regardless of its nature or the type of components it is made up of. Stephen G. Haines defines a system as "a set of elements or components that work together in relationship for the overall good and objective (or vision) of the whole". He uses three important phrases in his definition, which are working together, in relationship and the vision of the whole. Working together is a collective effort that is additional to individual and professional efforts to achieve desired outcome. The goal of systems theory is to clarify the dynamic interactions and dependencies that exist between system elements as well as the interactions between the organization and its surroundings. It is predicated on the notion that systems are composed of linked components that cooperate to attain a common objective. The key principles of systems theory include the following:

Holism: The principle of holism emphasizes the interconnectedness of systems and the need to study them as a whole rather than as isolated parts. It suggests that the behaviour and characteristics of a system cannot be fully understood by analysing its individual components alone. Rather, it is necessary to study the relationships and interactions between these components to understand how the system functions as a whole.

Openness: The principle of openness emphasizes that systems are not isolated entities but are instead constantly interacting with their environment. Systems are open to inputs and outputs from their environment, and these inputs and outputs can influence the behaviour of the system. Understanding the relationship between a system and its environment is essential for understanding how the system functions and evolves over time.

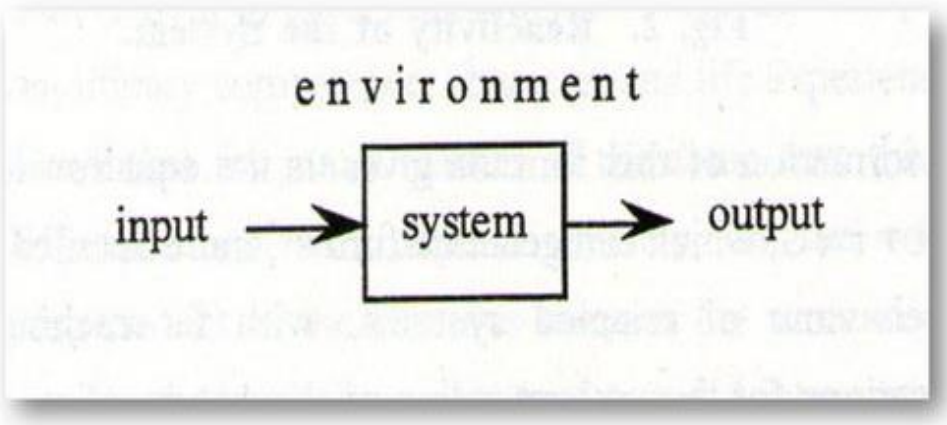
Feedback: The principle of feedback emphasizes the importance of information flows within a system. Feedback refers to the process by which a system receives information about its own behaviour and uses this information to adjust its behaviour. Feedback can be positive, reinforcing the system's current behaviour, or negative, encouraging the system to change its behaviour to achieve a different outcome.

Equifinality: The principle of equifinality emphasizes that there are multiple ways to achieve the same outcome within a system. Systems can reach the same outcome through different paths or processes. This principle suggests that there is no single "correct" way to achieve a goal, and that systems may employ different strategies to achieve the same outcome.

The fundamental ideas of systems theory generally highlight how interrelated systems are, crucial. It is to comprehend how a system interacts with its surroundings, and how important it is to study systems as a whole rather than as discrete components. People who comprehend these ideas will be able to analyze and comprehend complex systems more skilfully. System theory generally focuses on three levels of observations: the environment, the social organization as a system and human participants within the organization. According to system theory, the components of each system are structured in a hierarchical ordering and components are interdependent with one another in the system to the extent that one component cannot function without the support of other components. In the context of system evaluation, Systems Theory provides a framework for understanding the relationships between system components. It emphasizes the importance of understanding the inputs, processes, and outputs of the system, as well as the external factors that may influence its success or failure. A system being evaluated may be affected by external factors such as economic, political, social, and cultural factors. Moreover, systems theory emphasizes the importance of considering feedback loops and interactions between components. Positive feedback loops reinforce system successes, while negative feedback loops can lead to system failures.

These feedback loops should be recognized and understood by the evaluation in order to modify and enhance the system. Systems Theory is helpful in assessing intricate and multifaceted projects in larger contexts. Understanding the relationships between external factors and system components helps us to better understand how these factors may affect the success or failure of the system. In a range of evaluation contexts, including system evaluations, policy evaluations, and organizational evaluations, the Systems Theory can be used to analyze both qualitative and quantitative data.

Figure 8: A system and its environment



Source: Sadowski 1999, p19

Contribution of the theory to the study

The System Theory and Education Management Information System (EMIS) are concepts that are closely related. The System Theory is a theoretical framework for dissecting complex systems in order to analyze and comprehend them. dividing things into smaller components and researching how they relate to one another. The EMIS is a device (system) that is used to collect, process, and send out educational data and information, which can also be considered as a complex system. The system theory is relevant in this study because it provides a framework to understand how various elements of the school interact with each other through EMIS. EMIS can collect information on student enrolment, attendance, academic achievement, and demographics. The System Theory can be used to analyse this data in order to comprehend how these various educational system components interact with one another and how modifications to one component may have an impact on other components. For example, if a policy is implemented to know the number of staffs in a secondary school in the Limbe municipality, the EMIS can collect data on all the staff, which can be analysed using the System Theory to understand the staff needs and also forecast and plan for staffs, f there are shortages of staff. However, the school is going to have adequate staff and proper allocation of resources.

The System Theory can also help to identify areas of the education system that may be experiencing dysfunction or inefficiency. By analysing the system as a whole and identifying areas of weakness or inefficiency, educators and policymakers can develop targeted interventions to address these issues and improve the overall functioning of the education system. Systems

theory emphasizes the importance of continuous improvement in any system. In school administration, this means that school administrators should always strive to improve their practices and processes continually. By using EMIS to monitor and evaluate their performance regularly, school administrators can identify areas that require improvement and implement appropriate interventions to enhance their administrative effectiveness. The relationship between EMIS and the System Theory is that EMIS can be analysed using the System Theory to understand how different components of the education system interact with each other and how changes in one component can affect other components.

Empirical Review

Student Information System (SIS)

In a study conducted by Smith et al. (2018), the researchers sought to investigate the impact of adopting a student Information system (SIS) on administrative efficiency in educational institutions. The researchers adopted a mixed- method approach to gather data for their study. The findings revealed that the adoption of a Student Information System led to significant improvements in administrative efficiency across different departments such as centralized data storage and management, enhancing proper communication amongst staff members just to name a few in schools. This study is relevant in my research work because I seek to highlight how school administrators use student Information system to facilitate their administrative activities for proper decision making in secondary schools.

Symon et al. (2018) conducted a social survey with the aim of assessing the Mzuzu University Student Online Management System (SOMS) from the perceptive of students. The study applied the principles of both qualitative and quantitative research approaches. The principal data collection methods were questionnaires and follow up interviews. The findings of the study revealed that Mzuzu University has one prime service which is online registration and admissions, with online examination results access, student profile and finance as add-ons. The system benefits students as it has cut the time spent during registration periods in every new semester. Students faced the following major challenges when using the system; server loads as more students concurrently use the system, high cost of internet data bundles and charges, lack of system regular updates and high cost of password recovery. The study recommends that the university through the ICT Directorate should consider addressing the various issues impeding the effective use of the system amongst the student's community. This investigation work in line with my research work as one of my research questions is to examine the extent to which School

administrators use student information System for administrative effectiveness. I will use a quantitative research method in my study area to examine the use and impact of SIS for administrative effectiveness.

Wamutoro et al (2022), investigated the influence of EMIS for Student Information Management on Management of Public Secondary Schools in Uasin Gishu County. The study adopted pragmatic philosophical paradigm and employed mixed methods research design. Quantitative data was analysed using descriptive and inferential statistics while qualitative data was analysed in narratives and themes on a sample size of 302 respondent. The findings reveal that there was a significant association between EMIS and management of public secondary schools. Based on the findings the author concluded that EMIS for student information management has major long-term effects, which makes managing student information procedures for school, educational administrators, policy makers and teachers less cumbersome for example in keeping track of the student class attendance, academic performance, extra-curricular activities, awards, health records and student discipline management leading to effective management. Despite the implemented a policy advocating for Education Management Information Systems (EMIS) by government of Kenya, due to the manual system for managing the students' record the author recommended that public secondary schools must continuously improve on their implementation of EMIS for student information management. Though the author was not specific about the type of EMIS for student information management, it is very relevant in this study because this study seeks to investigate how the use Student Information System in secondary schools enhances student administrative activities.

Durnali (2013) studied the Contributions of E-School, a Student Information Management System, to the Data Processes, Environment, Education and Economy of Turkey. The study adopted a desk research approach and discussed how student information management in Turkey's Education has been handled before and after E-school system. The study concluded that the system helps the administrators, teachers and policy makers make accurate, fast analysis and decisions about such as immediate needs and development of education system by enabling them to carry out their task easily, efficiently, and timely manner. As a result, it helps them focus on the educational aspect more, the learning needs of students. However, the study was a desk research and data not collected by involving participants which provided a gap for the current which filled the gap by using a mixed method approach.

A study carried out by Hua and Herstein (2003) was aimed to examine the benefits and challenges of implementing EMIS and to identify best practices for designing and implementing such systems. They came to the conclusion that EMIS might significantly affect educational management in a number of ways based on their research. The EMIS could increase the effectiveness and efficiency of administrative duties like scheduling, record keeping, and student enrolment. The study also revealed that EMIS could improve school quality by giving educators and administrators fast, reliable access to information about behaviour, attendance, and performance of students. Using this data, evidence-based interventions could be put into place and areas for improvement might be found. Teachers, administrators, parents, and students are just a few of the stakeholders in the educational system with whom EMIS could help improve communication and collaboration. Notwithstanding the potential advantages of EMIS, the authors pointed out that putting such systems into place may provide a number of difficulties. These difficulties include reluctance to adapt, poor infrastructure, lack of technical know-how, and worries about the security and privacy of data.

This study by Hua and Herstein is significant in this study because it tackles the importance in putting EMIS into practice and relationship between EMIS and administrative effectiveness. It also significant to this current study because it examined the challenges of implementing EMIS, which are some of the issues observed. By addressing these challenges and leveraging the benefits of EMIS, school administrators can improve the quality of data and information for proper decision making which will significantly enhance administrative effectiveness in public secondary schools.

Chidinmachinenye et al (2019) conducted a study examine how school administrators use Management Information System for administrative effectiveness in secondary schools in Enugu Education Zone. The study used a descriptive survey design. The findings of the research work concluded that school administrators do not use Management Information System for students personnel administration and financial management in secondary schools because they do not allow students to apply for admission online, process students results using spreadsheet software, managing students attendance using spreadsheet software, disseminating information to students and parent through the school website, encouraging teachers to issue home assignment to student using email system, and encouraging multi-media instructional delivery using PowerPoint software application, drafting the school budget using a central database, just to name a few. The researcher therefore recommended among others that the Government through the State Ministry of Education should organize seminars and workshop for secondary school administrators in order

to train them on the utilization of management information system for student personnel administration and financial management. Chidinmachinenye et al (2019) further stated that the finding of this study did not agree with that of Akram (2011) who reported that there was high extent of Management Information System being used to support strategic planning for decision on financial matters and emphasized that the contradiction could be as result of the differences in the geographical locations.

Financial Information System (FIS)

A study carried out by Maingi (2014) was aimed to investigate the significance of using financial information systems in business organizations. The study's conclusion revealed that Financial Information System significantly affect easy planning, budgeting, management of financial transactions, smooth operation of activities, and prevents damage of resources in the business organization. Besides the findings also demonstrated that, the user interface of the FIS was unfriendly and that good business practices cannot create good reputation for a company, meaning that reputation of the company comes from other factors other than good business practices. The researcher recommends further studies to be carried on private companies to establish the factors influencing the usage, challenges and measures that can be used to improve financial information systems in those companies. Though this study was carried out in the business organization, it can be extended to the educational institutions which is what the current study seeks to fine as one of the objectives thus it provides insight of the impact of using FIS in school to enhance administrative effectiveness in public secondary schools.

Shah (2014) carried out a study, aimed to investigate how MIS can enhance the effectiveness and efficiency of school administration and improve the overall performance of the school. The study's conclusions showed that MIS significantly affected school administration in a number of ways. First and foremost, MIS made information more easily accessible and made it possible to gather, analyze, and report data on a variety of administrative aspects of schools, such as student attendance, academic performance, teacher evaluation, and financial management, in a timely and accurate manner Second, MIS enhanced the general administration of the school by assisting administrators in making better decisions. For instance, administrators were able to pinpoint problem areas and carry out the necessary interventions because MIS offered real-time data on student performance. Lastly, the study discovered that MIS enhanced cooperation and communication between various school stakeholders, such as parents, students, teachers, and administrators. MIS made it easier for stakeholders to share resources and information, allowing

them to collaborate more successfully to accomplish shared objectives. The substantial influence that MIS can have on school administration is demonstrated by Shah's study. MIS can improve communication and teamwork, facilitate informed decision-making, and supply timely and accurate data. These factors will all help to increase the efficacy and efficiency of school administration, which will ultimately boost student achievement. This study's findings are significant to my study because they demonstrate the ways in which an organized EMIS can enhance effective administration and decision-making. Because this study is restricted to the school level, its conclusions can be applied to the central level as well.

A study carried out by Harerimana (2020) had as purpose to investigate the impact of Education Management Information Systems (EMIS) on effective school management in schools of excellence in Nyarugenge District, Rwanda. The study used a descriptive survey design. Questionnaire, observation sheet, and documentary analysis techniques were employed for data collection. The study's findings revealed that there is a high availability of EMIS infrastructure and its accessibility with limitations of low and slow provision of internet, duplication of data due to use of multiple systems, and staff sharing User right. It was found that EMIS training sessions were conducted. The areas of training improvement include training follow-up, regular support, training of new staff, and provision of EMIS user guide. It was also found that schools used EMIS in financial and non-financial school management activities with areas of improvement in delays of approvals and use of data in audit. However, the researcher further revealed challenges met in the EMIS implementation including low internet connection, duplication of data, sharing user right, lack of EMIS Strategic development Plan, limited access to EMIS, limited training sessions and follow-up, and lack of regular EMIS technical support at school. Harerimana (2020) recommended to staff to avoid sharing user right for security purposes. Schools should avail strong internet, provide a support of EMIS experts to school staff, and organised follow-up activities and more trainings. Just like some previous studies the is a significant relationship between EMIS and effective management of schools but the educational managers faced lots of challenges some of which has been highlighted. It is important to this study because it brings out the importance of using EMIS in educational administration and examine those challenges that school administrators do faced in implementing the system for better solutions.

Human Resource Information System (HRIS)

Sam et al (2023) examine how the dimensions human resource information systems such as HR support system, HRIS skills, and HRIS components relate with administrative effectiveness of

heads of tertiary institutions in terms of efficient personnel administration, effective time management, and financial efficiency. The findings revealed that the adoption of human resource information systems such as human resource support systems, human resource information system skills, and human resource information system components promotes administrative effectiveness, especially in terms of efficient personnel administration, effective time management, and financial efficiency. Among other things, the researcher recommended that management of tertiary institutions should make available state-of-the-art Human Resource Information Systems for administrative heads and other administrators to utilize in carrying out their functions effectively. Sam et al (2023) further recommended that administrators of tertiary institutions, can use the human resource information systems (HRISs) as real tools to carry out tasks like payroll computation, electronic recruitment and selection, information dissemination and retrieval, information storage, etc., resulting in efficiency, effective time management, and financial efficiency, among other things. This study was limited to tertiary institutions like the universities, but it can be extended to the secondary level. My research seeks to explore as one of its objectives the use and effects of Human Resource Information systems for administrative effectiveness in the public secondary schools.

In A study conducted by Raby (2004), on ICT integration in public secondary schools in Uganda. The sample of the study consisted of 12 secondary schools, 12 principals, three education officers, three curriculum developers and 20 students. Qualitative data was collected using interviews of principals, education officers and curriculum developers whereas questionnaires were administered to students. The results of the study reveal that in most public secondary schools, ICT application in human resource management is the responsibility of the school principal.

According to a research study by Ehsan et al. (2020), using EMIS in a higher education institution increased resource utilization efficiency by 25% and reduced resource waste by 15%. This indicates that EMIS has a major impact on sustainability and cost-effectiveness in educational settings. For educational institutions to deliver high-quality instruction and support services, resource allocation must be done efficiently. EMIS provides tools to track how resources are used, evaluate demand, and make appropriate plans. By doing this, the impact of the resources that are available is maximized and resources, including teachers, classrooms, and materials, are distributed optimally. This study is limited to the higher education. The investigations and findings can be extended to secondary level of which this current study seeks to find.

Leva, Lucero, and Cabrera (2022) investigate how EMIS can help with education policy decision-making. In light of the Sustainable Development Goals (SDGs), which seek to guarantee inclusive and equitable quality education and encourage opportunities for lifelong learning for all, this work emphasizes the significance of EMIS. The authors suggest that by offering precise and current data on student enrolment, teacher qualifications, infrastructure, and other educational indicators, EMIS can assist in achieving these objectives. To enhance educational outcomes, this data can be utilized to pinpoint gaps and rank interventions in order of importance. Leva, Lucero, and Cabrera also talk about the difficulties in putting an EMIS into practice, such as the requirement for trustworthy data sources, sufficient funding, and technical know-how. They suggest that partnerships between stakeholders in education and efficient governance frameworks are essential to an EMIS's success. Leva, Lucero, and Cabrera (2022) stress how crucial EMIS is for guiding decision-making and policy in education. As a focus of our research, quality EMIS for quality NFE data, they propose that EMIS can help guarantee that education policies are evidence-based, sensitive to learners' needs, and in line with national and international goals. This study's research is crucial because it will enable us to expand on the conclusions and apply them to our own context, which looks at how better educational data can enhance opportunities for public secondary schools.

Wemba (2020) carried out study with the aim of examining the extent to which the use of EMIS affects planning of the school processes; determining the effects of Principals' integration of ICT facilities in EMIS on the effective management of their schools; and to finding out strategies for improving the effectiveness of secondary school management vis-à-vis the use of EMIS. Both descriptive and inferential statistics were used in analysing the data collected. Specifically, the Spearman's rho Correlation was used. The findings revealed that: there is a significant relationship between the use of EMIS and planning of school processes that is school principals use EMS handling of school discipline and decision making, handing over (during replacement), or refer to past records whenever they are planning for a future event, update past records like timetables. for effective management. In addition to that, the integration of ICT facilities in EMIS significantly enhances effective school management. Wemba (2020) based on his findings also stated that the provision of information management expert to develop a situational MIS for each school and the provision of ICT tools to each school by government could help to improve upon effectiveness of secondary school as concerns information management. it was recommended amongst others that the government should train and provide experts in information management to design MIS for each school and that heads of schools should individually go for professional development

especially in the domains of educational management and ICT. This study is relevant to the current study as it helps the researcher bring out some strategies that can encourage school administrators adopt and implement EMIS in the administrative processes.

Another investigation conducted by Monono E.M. (2022) was aimed at examining the influence of EMIS on leadership and management within the University of Bamenda. The author argued that by understanding the impact of EMIS on university leadership and management, it would be possible to find major problems and challenges met during the implementation and use of EMIS, and later take measures to enhance its implementation and use for improved leadership and management within the university. The findings show that EMIS has the potential to significantly enhance the quality of teaching and learning. However, the study also revealed that the university was inadequately equipped in terms of EMIS operations, and the available EMIS services were not being effectively used. Moreover, EMIS was perceived as a potent tool that could contribute to enhancing educational performance, as it enables management to find areas of concern and supplies a systematic approach to address those challenges. In addition, EMIS was found to support strategic planning for education and serve as a diagnostic tool to assess the existing ability and characteristics of the education system.

Ako (2022) sought to investigate how the Education Management Information System (EMIS) contribute to the administrative effectiveness in the Yaoundé municipality. The study adopted the descriptive survey design frequency, percentage, mean ` and standard deviation. The findings of the study revealed that most Yaoundé's schools owned desktop computers and other basic computing equipment, only 51.9% of the schools had internet access, and nearly none of the schools had library software. Less than 1% of schools had interactive whiteboards, and only 43.5 percent of them had email access. This indicated that many of the respondents had EMIS facilities in their schools. The author recommended that the Ministry of Secondary Education should provide and avail regular online EMIS support when needed by school managers and staff through available permanent expert for EMIS to support, the government should also improve on the level of training of Principals, Vice principals and Head of departments on EMIS and other ICT through induction courses, refreshers courses, seminars and workshops. This study is in line with my study though it is limited to the Yaoundé municipality, it could be extended to other parts of the country which my study seeks to explore.

Apongnde P. & Fozing I. (2022) emphasize that there is still significant progress required concerning the digitalization of Education Management Information Systems (EMIS) within

Cameroon's higher education management system. The integration of management information systems into state universities in Cameroon has proven to be exceptionally challenging, with numerous drawbacks identified. The study identifies three primary determining factors: the availability of digital devices supporting EMIS, administrators' digital skills, and their perception of digital EMIS. Notably, the investigation reveals that users themselves are predominantly responsible for providing the digital devices used, as the contribution from higher authorities is relatively insignificant. This indicates a lack of attention from State University authorities in Cameroon toward technological innovations in EMIS. Additionally, the majority of individuals in Cameroon state universities confirmed that they have not received any formal training on digital EMIS. While some educational institutions place importance on technology adoption and exert considerable efforts to integrate and utilize their information management systems effectively.

After analysing the previous studies, one could say existing studies have explored the implementation and impact of Education management information system (EMIS) in various educational settings. Nevertheless, there is a research gap as regards the specific use of EMIS by school administrators in public secondary schools within the Limbe municipality. Though some investigations have explored the EMIS adoption by administrators in schools, there is still some gabs when it comes to how school administrators use EMIS to enhance administrative effectiveness at the local level precisely in the Limbe municipality. This study is going to examine the extent of the use of EMIS in public secondary schools to enhance administrative effectiveness in the Limbe municipality of the Southwest region of Cameroon.

According to a research study by Ehsan et al. (2020), using EMIS in a higher education institution increased resource utilization efficiency by 25% and reduced resource waste by 15%. This indicates that EMIS has a major impact on sustainability and cost-effectiveness in educational settings. For educational institutions to deliver high-quality instruction and support services, resource allocation must be done efficiently. EMIS provides tools to track how resources are used, evaluate demand, and make appropriate plans. By doing this, the impact of the resources that are available is maximized and resources, including teachers, classrooms, and materials, are distributed optimally. This study is limited to the higher education. The investigations and findings can be extended to secondary level of which this current study seeks to find.

Table 2 : Operationalization of variables

Independent variable is the **Educational Management information System (EMIS)** while the Dependent variable is **administrative effectiveness.**

Independent Variable: **EMIS**	Operationalization
IV1= Student Information System	Data recording, information retrieving, enrolment, Data update, marks entry, storage, tracking, generate report booklets.
IV1= Financial Information system	Monitor school fees payment, Revenue management Record financial transaction. Budgeting Obtained financial statements
IV1= Human Resource Information System	Staff incentives, Staff record Staff appraisal Staff promotion Memo Staff monitoring and evaluation. Staff planning and forecasting.
Dependent Variable: **administrative effectiveness**	Communication Design timeline activities. Proper planning Time management Allocation of pedagogic resources Allocation of learning resources Security measures.

Source: Field data 2024

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter presents the research framework and design in which data were collected and analysed. The major research procedure that this chapter will focus on are: research design, the population of the study, area of the study, sample size and characteristics, instruments and validation of the instrument, reliability of instrument of study, administration of instrument, procedure for data analysis and ethical issues. It also displays research variables, data processing and Data analysis techniques.

Research design

Kawame (2010) defines research design as plan or the blueprint of how one intends to conduct research. Tromp & Kombo (2013), further describe research design as the structure of the research which is able to show how all the major parts of the research project were able to work together so as to address the problem. A descriptive-survey design based on the standards of the quantitative design was used in this study. According to Creswell (2009), "a descriptive survey design provides a description of trends, attitudes, or opinions of a population by studying a sample of that population. From sample results, the researcher generalizes or makes claims about the population". According to Nworgu (2015) descriptive survey design is the design which aims at collecting data on the opinion of a cross section of the public and describing in a systematic manner the characteristics, features or facts about a given population. This investigation is concerned with the collection of data and so the descriptive survey design is rated appropriate for the study. This design was adopted by the researcher with aim to ensure a maximum description of the situation, in order to get more concrete and reliable information about the use of Educational Management Information System (EMIS) by school administrators for effective administration. The descriptive survey design was used to identify variables, collect responses from respondents and examine relationships among them. Quantitative survey research design is chosen because it is the most appropriate as it is reliable, cost effective, generalizable, and versatile. This quantitative method was characterized by personal interviews through the Likert Type questionnaires of principals, vice Principals and Bursars of the public secondary schools in the Limbe municipality with the aim of demonstrating how the use of EMIS can influence effective administration.

Area of study

This study was carried out in the Limbe Municipality. The study covers all the three municipalities under the umbrella of Limbe City that is the Limbe one, Poh Council (54% of the total population), the Limbe two, Mokundange Council (32%) and the Limbe three, Bimbia Council (14%). Limbe City is located within Fako Division of the Southwest Region of Cameroon. It is the Administrative Headquarters of the Fako Division. Limbe City. It has an estimated population of over 200,000 inhabitants with a population density of about 237 inhabitants per Km^2. (LCC). The Limbe municipality has primary, secondary schools, vocational, and higher institute of learning. Specifically, the study was conducted in all the public secondary schools in the Limbe municipality. The table below illustrates the schools considered within the 3 sub-divisions (municipalities) in Limbe.

Table 3 : **Research coverage area**

Subdivision	**School**	**Number of schools**
Limbe 1	GHS LIMBE	4
	GBHS LIMBE	
	GTTC	
	GHS BONADIKOMBO (MILE 4)	
LIMBE 2	GHS BATOKE	2
	GTHS MOKINDI	
LIMBE 3	GHS MBONJO	3
	GTHS BIMBIA	
	GSS MABETA	

Source: Research data (DDSE Fako),2024

Description of Target Population

Best and Kahn (2007), defines a population as any group of individuals who have one or more characteristics in common that are of interest to the researcher. The population may be all the individuals of a particular type or a more restricted part of that group. Every possible person that is relevant to your research is the population of the study. The target population refers to the large group to which the researcher wishes to generalize the results of the study. The target population in this study consist of all Principals, Vice Principals, and bursars in all the public secondary

schools in the Limbe municipality. The reason for choosing this population is because the study is related only to administrators (Principals, Vice Principals, bursars) who are the backbone of administrative effectiveness in schools and EMIS infrastructures has been identified as a tool for effective administration.

Table 4: Target population

COUNCIL	NAME OF SCHOOLS	N0 OF PRINCIPAL	N0 of VICE PRINCIPAL	BURSAR	TOTAL	SAMPLE SIZE
	GHS LIMBE	1	7	1	9	8
	GBHS LIMBE	1	10	2	13	11
	GTTC	1	1	1	3	3
LIMBE 1	GHS BONADIKOMBO	1	6	1	8	7
	GHS BATOKE	1	5	1	7	6
LIMBE 2	GTHS MOKINDI	1	4	1	6	5
	GHS MBONJO	1	7	1	9	8
	GTHS BIMBIA	1	3	1	5	4
LIMBE 3	GSS MABETA	1	1	1	3	3
TOTAL		9	44	10	63	55

Source: Research data (DDSE Fako),2024

According to the available data from the Divisional Delegation of Secondary Education for the Fako division in the Southwest Region of Cameroon, there are 9 public secondary schools, making up a total number of 9 Principals, 44 vice principals and 10 bursars given a total number of 63.

Sample Population and sampling technique

A sample population is a portion of the total population that is representative enough to make generalization of the population (Kevin, 2022). This study adopted the simple random technique. A simple random sampling is a probabilistic technique of selecting respondents to a research survey in which no particular criterion for selection is required. All respondents have equal chances of being selected (Kevine, 2022; Mutil, 2022). This sampling technique was used to give all the schools and Principals equal chances of being selected. The sample size of the population was also determined by using the Krejcie and Morgan Table (1970) (found on the Appendix). The calculated sample size from Krejcie and Morgan Table for a target population of 63 with a desired confidence level of 95% and a margin error of 5% is approximately 55, 8 Principals, 38 Vice principals and 9 bursars.

Data Collection Method.

Data were collected in this study using Questionnaires. A questionnaire is a data collection tool in which written questions are presented and are to be answered by the respondents in written form (Kongmany, 2009). Ary, Cheser, & Sorensen, (2010) stated that, a questionnaire is an instrument in which respondents provide written responses to questions or mark items that indicate their responses. A questionnaire has different forms of administration; 1) Hand-delivery questionnaires to respondents and collecting them later. 2) Sending questionnaires by mail with clear instructions on how to answer the questions and asking for the mailed responses. 3) Gathering all or part of the respondents in one place at one time, giving oral or written instructions, and letting the respondents fill out the questionnaires. In this study the major research instrument used was self-administered to the principal's, vice principals and bursars. The questionnaire shall contain closed ended questions, geared towards investigating how school administrators use EMIS for administrative effectiveness in public secondary schools in the Limbe municipality.

Instrument for Data Collection

Questionnaire were designed using a Likert scale of 4-1 (Strongly Agree, Agree, Disagree and Strongly Disagree respectively.). In this investigation the questionnaires were made up of the introductory part containing the letter to the respondents, instructions and title of the questionnaire and the other section which comprised of section A: Biographical data of Respondent, Section B: enquiries on the independent variable. Section C, enquiries on the dependent variable. The respondents were required to tick each item in the appropriate column that mostly represents their opinion based on their degree of agreement or disagreement with the statement.

Validity of the Instrument

Validity is defined as the extent to which an instrument measured what it claims to measure. The focus of recent views of validity is not on the instrument itself but on the interpretation and meaning of the scores derived from the instrument (Ary, Cheser, & Sorensen, 2010). In order to test the validity of the research instruments in this study, a pilot study was carried out in a public secondary school in Tiko. The pilot study results were used to review the research instruments to fit the purpose of the study in order to minimise data collection and analysis barriers and errors. In addition to pilot study, questions from questionnaires were carefully examined by the research supervisor, the expert in educational management and ICT, grammatically corrected and checked to avoid ambiguity, and confusion in responses. The validity also was ensured through proof reading of instruments, and member checking or external audit of instruments. This provided the researcher with feedback about instruments designed from expert in the domain.

Reliability of instrument.

The reliability of the questionnaires was determined by administering eighteen (18) copies to eighteen (18) administrators of some public secondary schools in the Tiko municipality. SPSS 20 (Statistical Package for the Social Sciences) was to ensure the reliability of the instrument; a Cronbach alpha statistics technique was used and a reliability coefficient of 0.989, 0.991 0.89 and 0.990 was obtain for RQ1, RQ2, RQ3 and DV respectively. The results put together showed that the mean average of reliability coefficient is 0.96. Cronbach's alpha coefficient results were good. This shows that each of the sub items was reliable enough for the study. A general accepted rule is that α of 0.6-0.7 indicates an acceptable level of reliability. This is in line with Nworgu (2015) who recommended that co-efficient value of 0.60 or above is adequate for any research work.

Table 5 alpha coefficient for the reliability test

S/N	**Aspect**	**Number of items**	**Cronbach's Alpha**
1	To what extent is SIS used for the effective administration	10	0.98
2	To what extent is FIS used to enhance administrative effectiveness	8	0.99
3	What is the extent of the use of HRIS for administrative effectiveness	13	0.89
4	Enquiries on the dependent variable.	12	0.99
Mean average			**0.96**

Source: research data 2024

Key notes

Cronbach's alpha coefficient results ranges from 0 to 1.

- 0.70 and above is good.
- 0.8 and above is better.
- 0.90 and above is the best.

Administration and collection of Data Collection.

The questionnaires will be administered to school principals, vice-principals and bursar's who are major respondents in this study. Clarifications were also made on respondents' questionnaire where necessary. Enough patients were exercised by the researcher for the questionnaire to be filled on the same day so as to ensure high-rate returns.

Data analysis.

Data collected through questionnaire from the principals, vice principals and bursar's will be analysed using descriptive and inferential statistics. Data from the questionnaires shall be analysed using the SPSS software version 20 and frequencies, percentages, means scores, standard deviation and global mean using the Likert scale which constituted the descriptive statistics. For generalization about the population, inferential statistics such as the simple linear regression model was used to test the hypothesis of the study. Daniel (2019) explains that when a research design seeks to establish a relationship between variables, a correlation statistical test is used to test the hypothesis. The purpose of choosing this was not only to assess the association but also to provide the strength of the direct link between the two variables Education Management Information System (EMIS) and administrative effectiveness in public secondary schools.

Ethical Considerations.

Ethical issues are a set of standards designed specifically to guide the work of researchers, specifying their obligations to their subjects and their profession. Ethical principles lead all the activities related to this study (Ary, Cheser, & Sorensen, 2010)

The research study was carried out making use of all the required and acceptable procedures to ensure that the ethical issues are taken care of. That is obtaining the permission to conduct the study, ensure confidentiality of the data collected, informed consent, respect toward research environment, accurate interpretation and presentation of data, and respect of respondent's privacy. Permission was obtained by the researcher to conduct the study and collect data from the faculty of Education in the university of Yaoundé 1.

The researcher was also conveying the purpose of the study to the proposed respondents as per standard research requirements. Deceptive practices were avoided and respect indigenous cultures as well as discloses sensitive information. The researcher respected the participant's privacy by not putting their names in the study. This was done through respect of anonymity of participants. The questionnaires were answered by the participants voluntarily.

In addition, the researcher provided accurate interpretation and presentation of data. Result of the findings was presented in an honest and professional manner by the researcher.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

This chapter presents the research findings and analysis. The study investigated school administrator's use of Education Management Information System (EMIS) on the administrative effectiveness of public secondary schools in the Limbe municipality. The data were collected through questionnaires. Findings were presented thematically to respond to the three specific objectives of this study. The study sought to provide answers to three specific objectives: (i) to examine the extent to which Student Information System (SIS) is used for effective administration in public secondary schools in the Limbe Municipality. (ii) To investigate how the use of Financial Information System (FIS) enhance administrative effectiveness of public secondary schools in the Limbe municipality. (iii) To assess the extent of the use of Human Resource Information System (HRIS) for administrative effectiveness in public secondary schools in the Limbe municipality.

Response Rate

All the participants of this study were expected to contribute by responding to the questionnaire. The participants included principals, vice principal and bursars. A total number of 55 questionnaire were administered in the different schools mentioned above within the Limbe municipality. Majority were filled and handed back to the researcher, while others made appointments of questionnaire return. A total number of 52 questionnaire were returned to the researcher, obtaining a return rate of 94.54%.

Descriptive statistics on demographic information

Demographic characteristics of participants in this study includes the gender, position, work experience and qualification, age, and knowledge of EMIS.

Gender of respondent

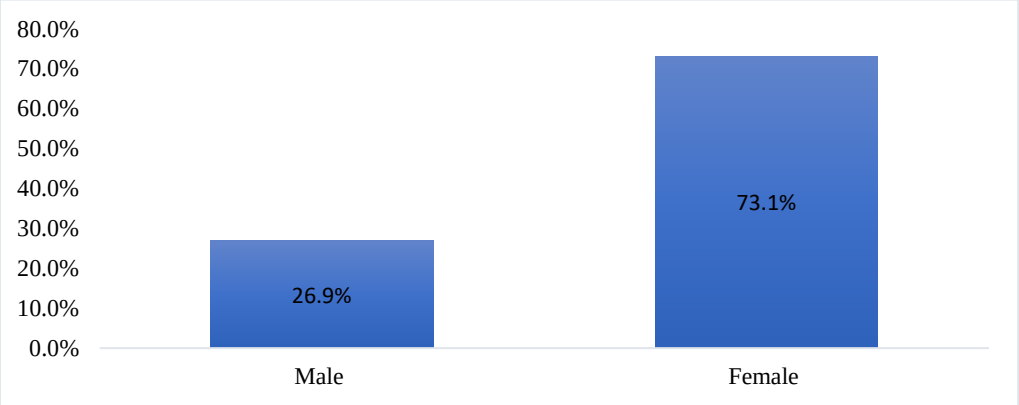
The gender for this study included male and female administrators of secondary schools in Limbe municipality.

Table 6. Respondent's characteristics by gender

Variable	Frequency	Percentage
Male	14	26.9
Female	38	73.1
Total	52	100.0

Source: Field data (2024)

Figure 9: respondent's characteristics by gender



The bar chart on respondent's characteristics by gender indicates that female constituted a bigger number of respondents (73.1%) compared to male participants which represented 26.9%. This shows that the majority were female participants.

Administrative Position

The respondents' position was classified in three categories. The first category were Principals. The second category were Vice Principals. The third category were bursars.

Table 7: Participants characteristics by position in the school.

Variable	**Frequency**	**Percentage**
Principal	8	15.4
Vice principal	37	71.1
Bursa	7	13.5
Total	52	100.0

Source: Field data (2024)

Figure 10: Participants characteristics by position in the school.

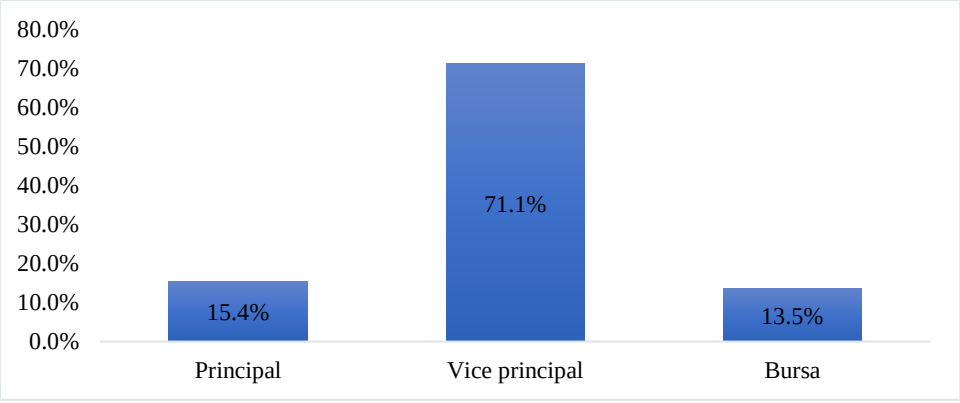


Figure 9 shows that 15.4% respondent are Principals, 71.1 % were Vice Principals while 13.5% were bursars. From the bar chart it is indicated that Vice principals constitute the highest population.

Work Experience

Respondents were group into three group of experience. That is first group (0-10 years' experience), Second group (10 -20 years' experience) and third group range from (20+ years' experience.

Table 8: Participants characteristics by years of experience

Years of experience (years)	Frequency	Percentage
1-10	13	25.0
11-20	17	32.7
≥21	22	42.3
Total	52	100.0

Source: Field data (2024)

Figure 11: Participants characteristics by years of experience

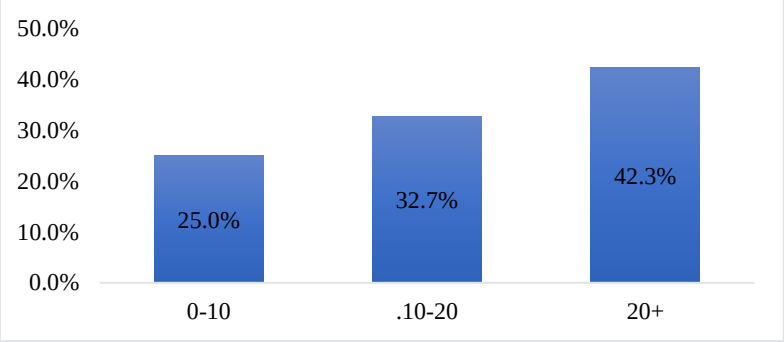


Figure 10 shows that, the highest portion of respondents of 42.3%, was of age between 20+ years of work experience. The next group of 32.7 % was of age ranging between 10-20 years of work experience. The lowest group of respondents in terms of year of experience was between 0 -10 with 25.0%. This investigation indicates that majority of administrators of public secondary schools in the Limbe municipality are more than 20 years of working experience in the profession.

Educational level of respondent (Qualification)

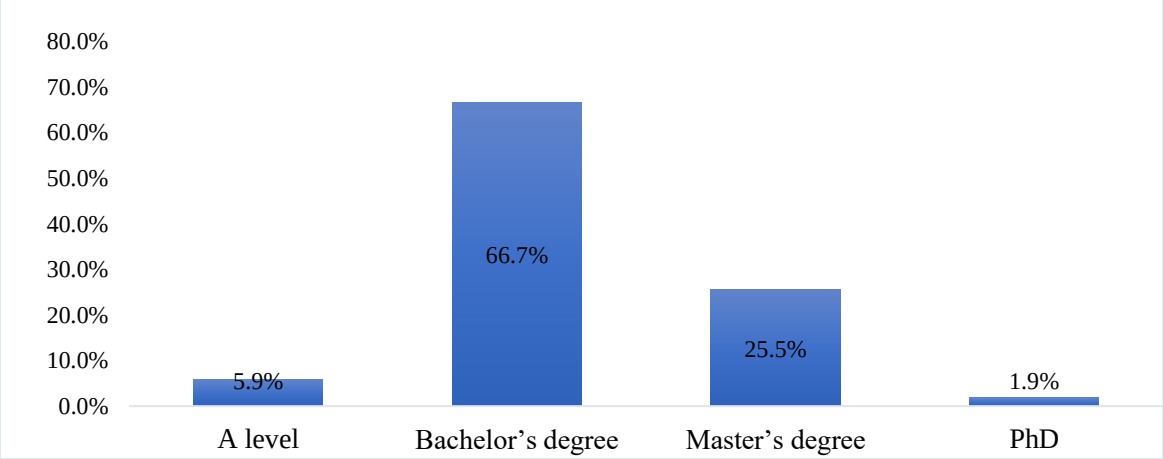
From the information collected respondents were divided into four categories base on their educational qualification. That is AL, bachelor's degree, master's degree and PhD.

Table 9. Participant's characteristics by Qualification

Years of experience (years)	**Frequency**	**Percentage**
A level	4	5.9
Bachelor's degree	34	66.7
Master's degree	13	25.5
PhD	1	1.9
Total	52	100.0

Source: Field data (2024)

Figure 12: Participants characteristics by Qualification



The bar chart shows that, most of the respondent had a bachelor's degree with 65.7%, followed by master's degree with 25.0%, AL with 7.9% and the least with 1.9% for PhD. From the information collected majority of the respondent had the necessary qualifications to administer and teach in secondary school.

Age of Respondents

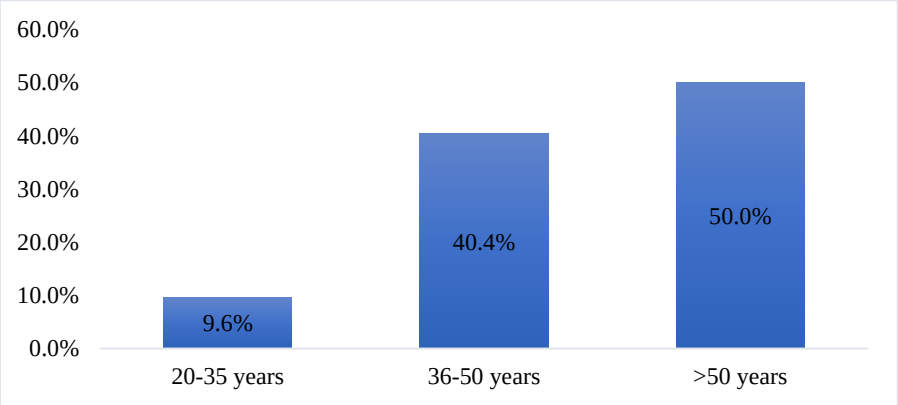
The age of respondents was recorded in three categories. The first category was a range of 20 to 35 years old. The second category was between 36 to 50 years old. The third category was 50 and above.

Table 10: **Participants characteristics by age group**

Age group	Frequency	Percentage
20-35	5	9.6
36-50	21	40.4
>50	26	50.0
Total	52	100.0

Source: Field data (2024)

Figure 13. Participants characteristics by age group



As shown in figure 12, 50.0% of the respondents ranged from 50 and above years old. The following category of 36 to 50 represented 40.4% of the respondents. The category that constituted few was between 20 to 35 years that represented 9.6%. The findings indicated that 50% of age group of respondents were above 50 years old.

Knowledge on EMIS

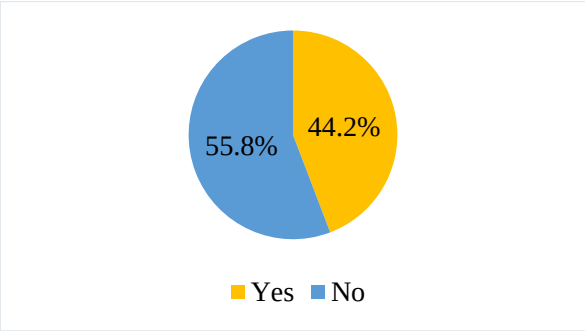
In this section, the researcher sought to know if the respondents had any previous knowledge on EMIS.

Table 11: Heard of EMIS

Variable	Frequency	Percentage
Yes	23	44.2
No	29	55.8
Total	52	100.0

Source: Field data (2024)

Figure 14. Heard of EMIS



Presentation of Findings on the research objectives

Objective One: Use of Student Information System (SIS) for effective administration in public secondary schools in the Limbe Municipality.

In order to answer this research objective, data collected were analysed using percentage, frequency, mean and standard deviation as shown in table 12.

Table 12 . Use of SIS for effective administration in the public secondary schools in the Limbe municipality.

Statement	SD	D	A	SA	Mean±sd
	f (%)	f (%)	f (%)	f (%)	
Student's data are recorded in the database.	0 (0.0)	2 (3.8)	12 (23.1)	38 (73.1)	3.69±0.54
Student's information is retrieved from the database.	0 (0.0)	1 (1.9)	18 (34.6)	33 (63.5)	3.62±0.53
Enrolment of new student in the information system.	0 (0.0)	3 (5.8)	18 (34.6)	31 (59.6)	3.54±3.54
I update data for continuing students in the Information System.	0 (0.0)	6 (11.5)	20 (38.5)	26 (50.0)	3.38±0.61
I use software for students' marks entry and storage.	1 (1.9)	0 (0.0)	8 (15.4)	43 (82.7)	3.79±0.54
Students' marks stored in the software	0 (0.0)	1 (1.9)	6 (11.5)	45 (86.5)	3.85±0.42
I generate lists of students per class from the database in case needed.	1 (1.9)	2 (3.8)	14 (26.9)	35 (67.3)	3.6±0.66
I use information system to track students	5 (9.6)	11 (21.2)	15 (28.8)	21 (40.4)	3.0±1.0
Students' report booklets after each assessment are accessible.	3 (5.8)	3 (5.8)	15 (28.8)	31 (59.6)	3.42±0.85
Students' report booklets after each assessment generated.	4 (7.7)	5 (9.6)	13 (25.0)	30 (57.7)	3.33±0.94
MRS	10 (2.1)	29 (6.2)	126 (26.9)	303 (64.7)	3.52±0.25

SA: Strongly Agree, A: Agree, D: Disagree, SD: Strongly disagree, sd: standard deviation, MRS :Multiple Response analysis (Nparticipants=52; Nresponse=468).

Source: Field Data (2024)

In table 12 majority of respondents strongly agreed 38 (73.1%) that student data are recorded in the database and majority of respondents 33 (63.5%) strongly agreed that student information is retrieved from the database. Also, majority of respondents 31 (59.6%) strongly agreed that the enrolment of new students in the information system is a smooth process while most 26 (50.0%) strongly agreed that they update data for continuing students in the information system. The vast majority of respondents 43 (82.7%) strongly agreed that they use software for students' marks entry and storage while most of respondents 45 (86.5%) strongly agreed that students' marks are stored in the software. Furthermore, majority of respondents 35 (67.3%) strongly agreed that they generate lists of students per class from the database when needed and a slide majority 21 (40.4%) strongly agreed that they use the Information System to track students. A large portion of respondents 31 (59.6%) strongly agreed that students' report booklets after each assessment are accessible. Additionally, most 30 (57.7%) strongly agreed that report booklets for students after each assessment are generated.

Overall extend of the use of SIS in schools for effective administration

Based on multiple computation of all items, majority of the responses (303, 64.7%) for all the items combined shows that the respondent strongly agreed on the use of SIS in their school for administrative activities. Based on data analysis on Table 12 the study found out that school administrator’s use Student information system to enhance effective administration in public secondary schools in the Limbe municipality.

Objective Two: Use of Financial Information System (FIS) to enhance administrative effectiveness in the public secondary schools in the Limbe municipality.

To answer this research objective, data collected were analysed using percentage, frequency, mean and standard deviation as shown in table 13.

Table 13. Use of Financial Information System (FIS) to enhance administrative effectiveness.

Statement	**SD**	**D**	**A**	**SA**	**Mean±sd**
	f (%)	**f (%)**	**f (%)**	**f (%)**	
I use Information System for monitoring students' school fees payment.	14 (26.9)	8 (15.4)	20 (38.5)	10 (19.2)	2.5±1.09
I manage revenue for the school.	13 (25.0)	13 (25.0)	17 (32.7)	9 (17.3)	2.42±1.052
I manage expenses for the school.	17 (32.7)	11 (21.2)	13 (25.0)	11 (21.2)	2.35±1.15
Financial transactions are recorded in the system	11 (21.2)	10 (19.2)	15 (28.8)	16 (30.8)	2.69±1.13
I use software to budget for school activities	17 (32.7)	19 (36.5)	10 (19.2)	6 (11.5)	2.1±0.99
School financial statement is easily accessed.	11 (21.2)	10 (19.2)	17 (32.7)	14 (26.9)	2.65±1.1
School financial statement is easily obtained.	12 (23.1)	10 (19.2)	18 (34.6)	12 (23.1)	2.58±1.09
I generate school fee reports.	15 (28.8)	13 (25.0)	11 (21.2)	13 (25.0)	2.42±1.16
MRS	110 (26.4)	94 (22.6)	121 (29.1)	91 (21.9)	2.46±0.19

SA: Strongly agree, A: Agree, D: Disagree, SD: Strongly disagree, sd: standard deviation, MRS :Multiple Response analysis (Nparticipants=52 ; Nresponse=416).

Source: Field Data (2024)

The results in Table 13 indicated the position of the respondents who strongly agree, agreed, disagree and strongly disagreed with the constructs used to examine the extend of the use FIS on school financial administrative activities. The most remarkable responses with high percentages are of those who agreed and strongly disagreed. A majority of respondent 20(38.5), agree that they use Information system for monitoring student's school fees payment, also 17(32.7) of the respondents agree to the item I manage revenue for the school. However, a vast majority of respondents 17(32.7) strongly disagree that financial transaction is recorded in the system. 17(32.7) respondents strongly disagree for the item, I use software to budget for school activities. Moreover, a vast respondent rate agree on school financial statement is easily accessed 17(32.7) and 18(34.6) for school financial statements is easily obtained. A slide majority of respondents 15(28.8) strongly disagree for I generate school fee reports. Based on multiple computation of all items, majority of the responses (121, 29.1%) for all the items combined shows that the respondents agree on the use of FIS in their school for administrative effectiveness.

Research objective Three: Use of Human Resource Information System (HRIS) in schools for effective administration in the public secondary schools in the Limbe municipality.

To answer this research objective, data collected were analysed using percentage, frequency, mean and standard deviation as shown in table 14.

Table 14. Use of Human Resource Information System (HRIS) for effective administration in the public secondary schools in the Limbe municipality.

Statement	**SD**	**D**	**A**	**SA**	**Mean±sd**
	f (%)	**f (%)**	**f (%)**	**f (%)**	
Incentives of staff are paid, using HRIS.	10 (19.2)	15 (28.8)	9 (17.3)	18 (34.6)	2.67±1.15
Incentives of staff are managed, using HRIS	11 (21.2)	13 (25.0)	14 (26.9)	14 (26.9)	2.6±1.107
Staff information is recorded in the software.	4 (7.7)	2 (3.8)	18 (34.6)	28 (53.8)	3.35±0.883
Staff information is retrieved in the software.	3 (5.8)	9 (17.3)	14 (26.9)	26 (50.0)	3.21±0.936
Staff appraisals are carried out using HRIS	9 (17.3)	18 (34.6)	14 (26.9)	11 (21.2)	2.52±1.019
Staff promotions are carried out using HRIS	12 (23.1)	19 (36.5)	16 (30.8)	5 (9.6)	2.27±0.931
I send Memos to staff members	6 (11.5)	15 (28.8)	18 (34.6)	12 (23.1)	2.71±0.965
Recruitment procedures of staff is done with the use of HRIS.	16 (30.8)	19 (36.5)	15 (28.8)	2 (3.8)	2.06±0.873
I use HRIS in the selection procedures of staff.	14 (26.9)	22 (42.3)	15 (28.8)	1 (1.9)	2.06±0.802
I use HRIS to Monitor of staff members.	15 (28.8)	17 (32.7)	13 (25.0)	7 (13.5)	2.23±01.022
Evaluation of staff members is done with the use of HRIS.	10 (19.2)	20 (38.5)	14 (26.9)	8 (15.4)	2.38±0.973
I use the Information System to Forecast for staff needs.	12 (23.1)	17 (32.7)	15 (28.8)	8 (15.4)	2.37±1.01
I use the Information System to plan for staff needs.	13 (25.0)	16 (30.8)	14 (26.9)	9 (17.3)	2.37±1.048
MRs.	135 (20.0)	202 (29.9)	189 (28.0)	149 (22.1)	2.52±0.39

SA: Strongly agree, A: Agree, D: Disagree, SD: Strongly disagree, sd: standard deviation, MRs. :Multiple Response analysis (Nparticipants=52; Nresponse=675

Source: field data, 2024

In this study, the majority of respondents strongly agreed (18, 34.6%) that incentives of staff are paid using HRIS, while for the management of staff incentives using HRIS, a significant portion (14, 26.9%) strongly agreed that this is done. Regarding the recording of staff information in the software, majority of the respondents (28, 53.8%) strongly agreed that HRIS is used, while 18 (34.6%) agreed. Similarly, for the retrieval of staff information in the software, 26 (50.0%)

strongly agreed this is done in their schools while 18 (34.6%) disagree that staff appraisals are carried out using HRIS in their school. Furthermore, for staff promotions carried out using HRIS, a notable portion (19, 36.5%) disagree and in terms of communication, most of the respondents (18, 34.6%) agreed that they send memos to staff members. For recruitment procedures of staff done with the use of HRIS, most of the respondents (19,36.5) disagreed. For the use of HRIS in the selection procedures of staff, a notable portion (22,42.3%) disagree that it was done in their school. Concerning HRIS to Monitor of staff members, most respondents (17, 32.7%) disagreed that this was not done and majority of respondents (20. 38.5%) disagree that staffs were evaluated with HRIS. For the use of Information System to Forecast for staff needs, most 17 (32.7%) disagreed this was done while most respondents (16,30.8%) disagreed that they use the Information System to plan for staff needs. Based on multiple computation of all items, a slim majority of the responses (202, 29.9%) for all the items combined shows respondents disagree on that HRIS was used in their schools for administrative activities in the Limbe Municipality.

Table 15: **Administrative effectiveness. (Dependent Variable)**

Statement	**SD**	**D**	**A**	**SA**	**Mean±sd**
	f (%)	**f (%)**	**f (%)**	**f (%)**	
I communicate with teachers and parents on school related issues.	3 (5.8)	5 (9.6)	13 (25.0)	31 (59.6)	3.38±0.89
I organise seminars and workshops often	2 (3.8)	15 (28.8)	16 (30.8)	19 (36.5)	3±0.91
Ensures that teachers monitor students' progress regularly through continuous assessment.	1 (1.9)	7 (13.5)	17 (32.7)	27 (51.9)	3.35±0.79
I delegate task to collaborators on time	1 (1.9)	11 (21.2)	16 (30.8)	24 (46.2)	3.21±0.85
Ensure proper planning of activities for the school.	0 (0.0)	7 (13.5)	16 (30.8)	29 (55.8)	3.42±0.72
I design timeline activities for the school on time.	1 (1.9)	6 (11.5)	23 (44.2)	22 (42.3)	3.27±0.744
I avoid delay in accomplishing scheduled programmes	3 (5.8)	7 (13.5)	21 (40.4)	21 (40.4)	3.15±0.87
Encourages regular parents-teachers association meetings.	0 (0.0)	9 (17.3)	26 (50.0)	17 (32.7)	3.15±0.69
I have concerns for the security of school property	0 (0.0)	7 (13.5)	23 (44.2)	22 (42.3)	3.29±0.69
I ensure proper allocation of pedagogic resources to teachers.	3 (5.8)	3 (5.8)	23 (44.2)	23 (44.2)	3.27±0.82
I ensure proper allocation of learning resources to students.	1 (1.9)	5 (9.6)	25 (48.1)	21 (40.4)	3.27±0.72
School equipment are replaced when damaged.	1 (1.9)	8 (15.4)	25 (48.1)	18 (34.6)	3.15±0.75
MRs.	16 (2.6)	90 (14.4)	244 (39.1)	274 (43.9)	3.24±0.12

Source: field data, 2024

In table 15 it is shown that, majority of respondents strongly agreed (31, 59.6%) that they communicate with teachers and parents on school-related issues effectively. Similarly, for

organizing seminars and workshops often, a significant portion (19, 36.5%) strongly agreed that this was effective. Also, with regards to ensuring that teachers monitor students' progress regularly through continuous assessment, a majority (27, 51.9%) strongly agreed that it was effective while concerning delegating tasks to collaborators on time, a notable portion (24, 46.2%) agreed this was effective. In terms of ensuring proper planning of activities for the school, a majority (29, 55.8%) strongly agreed it was effective. Similarly, for designing timeline activities for the school on time, a significant portion (23, 44.2%) agreed this was effectively done, while (22,42.3%) of the respondent strongly agreed. For avoiding delays in accomplishing scheduled programs, (21, 40.4%) strongly agreed, and (21, 40.4%) agreed this was done effectively. For encouraging regular parents-teachers association meetings, a significant portion (26, 50.0%) strongly agreed this was done. Most respondent (23,44.2%) agreed that they have concerns for the security of school property. 23 (44.2) strongly disagreed and agree that they ensure proper allocation of pedagogic resources to teachers. Similarly, most respondent 25 (48.1) agreed and strongly agreed that 21 (40.4) that they ensure proper allocation of learning resources to students and most strongly agree that (25,48.1%) School equipment are replaced when damaged.

Based on multiple computation of all items, a slim majority of the responses (274, 43.9%) for all the items combined shows respondents strongly agreed that administrative activities were effective in their schools, which is a strong indication that EMIS plays a significant role on administrative effectiveness in the public secondary schools in the Limbe municipality.

Research Hypotheses test

This section involves the verification of the hypotheses stated in chapter one of this study. The inferential test described for the testing of our hypotheses was a simple linear regression. Simple linear regression analysis was used to examine the relationship between dependent variable and an independent variable. It establishes a linear relationship between EMIS and administrative effectiveness by fitting a straight line through the data points. This line represents the best fit of the data and it can be used to make predictions about the value of dependent variable (administrative effectiveness) based on the value of the independent variable. (EMIS)

H0 1: The is no significant relationship between the use of Student Information System and effective administration in public secondary schools in the Limbe municipality.

A simple linear regression was conducted to evaluates the relationship between use of SIS and effective administration. A positive correlation (r=0.55) was found between the use of SIS and

effective administration. A significant regression was seen (F=21.68, df=1, p-value<0.0001). The adjusted R^2 was 0.302 indicating that the use of Student Information Systems explained approximately 30.2% of the variance observed in effective administration. For every one unit increase in the acceptance of the use of SIS increase effective administration by 0.843 (95% CI:0.48, 1.21; P<0.0001). **Table 16**

The regression equation was:

Effective administration =9.23+0.84SIS

We therefore reject the null hypothesis which states that the was no significant relationship between use of student information system and effective administration in the public secondary schools in the Limbe municipality and accept the alternative hypothesis.

Table 16. Simple regression of relationship between the use of student information system and effective administration in public schools. **.**

Model	**Beta coefficient**	**Standard Error**	**t-statistics**	***Sig.***	**95% CI.**
Constant	9.24	6.43	1.44	0.157	-3.61, 22.15
Student information system	0.843	0.181	4.656	0.000	0.48, 1.21

r=0.55,
F=21.68, df=1.
R^2=0.302
Source: field data, 2024

H0 2. There is no significant relationship between the use of FIS and effective administration in public schools.

A simple linear regression was conducted to evaluates the relationship between use of FIS and effective administration. A positive correlation (r=0.34) was found between the use of FIS and effective administration. A significant regression was seen (F=8.23, df=1, p-value<0.0001). The adjusted R^2 was 0.253 indicating that the use of financial information systems explained approximately 25.3% of the variance observed in effective administration. Based on the

regression coefficient, one unit increase in the acceptance of the use of FIS increase effective administration by 0.23 (95% CI:0.187, 2.86; P<0.008). **Table 17.**

The regression equation was:

Effective administration =31.97+0.23FIS

We therefore reject the null hypothesis which states that the was no relationship between use of Financial Information System and effective administration in public secondary schools in the Limbe municipality and accept the alternative hypothesis.

Table 17. Simple regression of relationship between the use of Financial Information System and effective administration in public secondary schools Limbe municipality. **.**

Model	**Beta coefficient**	**Standard Error**	**t-statistics**	***Sig.***	**95% CI.**
Constant	31.97	2.59	12.31	0.003	26.7, 37.19
Student information system	0.23	0.102	5.23	0.008	0.18, 0.45

r=0.256,
F=8.23, df=1.
R^2*=0.53*

Source: field data, 2024

H0 3: There is no significant relationship between the use of HRIS and administrative effectiveness in Public secondary schools in the Limbe municipality.

A simple linear regression was conducted to evaluates the relationship between use of HRIS and effective administration. A positive correlation (r=0.601) was found between the use of HRIS and effective administration. A significant regression was seen (F=27.4, df=1, p-value<0.0001). The adjusted R^2 was 0.354 indicating that the use of Human Resource Information Systems explained approximately 35.4% of the variance observed in effective administration. Based on the regression coefficient, one unit increase in the acceptance of the use of HRIS increase effective administration by 0.534 (95% CI: 0.329-0.739), P<0.0001. **Table 18**

The regression equation was:

Effective administration =24.26+0.533HRIS

We therefore reject the null hypothesis which states that the was no relationship between use of Human Resource Information System and effective administration in public secondary schools in the Limbe municipality.

Table 18. Simple regression of relationship between the use of HRIS and effective administration in public secondary schools. **.**

Model	**Beta coefficient**	**Standard Error**	**t-statistics**	***Sig.***	**95% CI.**
Constant	24.26	2.92	8.32	0.0003	-3.61, 22.15
Student information system	0.534	0.102	5.23	0.0001	0.32, 0.73

r=0.601,
F=27.4, df=1.
R^2*=0.354*

Source: field data, 2024

CHAPTER FIVE

DISCUSSION OF RESULTS, CONCLUSION AND RECCOMENDATIONS

Considering previous research, this last chapter aims to explain the findings from chapter four and provide potential explanations for any abnormalities or deviations from the predicted outcome. The findings were thematically presented to respond to three objectives and the hypothesis of the study. In the overall conclusion of the chapter, the research study is also reviewed. Some ideas in the form of recommendations are then presented. The chapter will conclude with recommendations for areas of further research findings and an assessment of the research work's limitations.

Discussion of results

As mentioned in the results, a total of 52 questionnaire, corresponding to 52 respondents were analysed from a sample of 55 who were administered. Thus, a return rate of 94.5% was obtained, which is representative enough for analysis (Simer, 2013). The fact that 73.1% of the respondents were women and 26.9% for men is not just coincidental. Additionally, most of respondents were Vice principals with 71.1%. in addition, majority of the respondent more than 20 years of working experience which played a major role in enhancing our study instrument's validity even more. Most of our respondents (55.8%), were bachelor's degree holders. When it comes to the awareness on EMIS, it was not surprising to discover that all respondents have at least heard of Education Management Information System, given that they are in a high technological potential city, where information flow takes various media quickly.

Discussion of research findings under specific objective

Objective one

The first specific objective for this study was to examine the extent to which Student Information System (SIS) is used for effective administration. in public secondary School in the Limbe municipality. Following the literature gathered, ten research items were investigated. Based on the analysis it was proven that school administrators use SIS to enhance administrative activities with majority of the respondent strongly agree with the overall computation of all items (303, 64.7%) given a high average rate. Therefore, school administrators strongly agree to the fact that they use SIS for administrative effectiveness by recoding student's data in the data base, retrieving student information, enrolment of new students in the information system, update data for continuing students, enter and store student's mark in the database, generate class list, track

students, get access and generate report booklet after each assessment. This results tie with the assertion provided by Durnali (2013) that Student Information Management System significantly affects management (administration) of secondary schools. In addition, the result work in line with the statement of Maere (2011) who explains that the SMS handles the administration part of students which includes admission, examination records, assessment process, finance, room allocation, transcripts, and examination results feedback. Therefore, based on the findings, SIS is revealed to be an important technological facility for effective school administration.

Objective two

The second research objective aimed to investigate the extent to which the use of Financial Information System (FIS) enhances administrative effectiveness of public secondary schools in the Limbe municipality. For this objective, the researcher selected eight items. Most respondents agreed to items 1, 2,4,6,7 and 8 with an average of 29.1% in favour of the fact that school administrator's use FIS to enhance administrative effectiveness in public secondary schools in the Limbe municipality by monitoring student's school fee payment, managing school revenue and expenses, record financial transaction in the system, budget for school activities, get access and obtain financial statements and also generate school fee reports. These results agree with Blandford (1997) affirmation that Financial Information systems can help track money owed to the school, generate receipts for all money collected, authorize valid payments; provide accurate, up-to date financial information on budget commitment and actual expenditure. and produce financial statements and other statements needed by schools to meet their statutory obligations. This finding disagrees with that of Chidinmachinenye et al (2019) who indicated in the findings that school administrators' do not use Management Information System for financial management in secondary schools by not, drafting the school budget using a central database, using remita online payment gateway for fees payment, preparing the school statement of account using operation support system and storing all financial information into storage devices. This contradiction may be because of differences in the time frame.

Objective three

The third research objective was to assess the extent of the use of Human Resource Information System (HRIS) for administrative effectiveness in public secondary schools in the Limbe municipality. Thirteen items were selected by the researcher for this objective. Majority of the respondent disagreed with item 5,6,,8,9,10,11,12 and 13 with an average of 202 (29.9%) The results obtained shows that school administrators do not use HRIS for administrative activities to

enhance effectiveness in the public secondary schools in the Limbe municipality, by not appraising, promoting the staff, carrying out recruitment procedures, selecting staff, monitoring staff, evaluating staff, forecast and plan for staff needs. This result disagrees with the findings of Sam et al (2023) who revealed that the adoption of Human Resource Information Systems components promotes administrative effectiveness, especially in terms of efficient personnel administration, effective time management, and financial efficiency. This contradiction may be because of differences in the level of educational intuition. Moreso this finding agrees with that of Hussein (2008) who reveals that, despite an appealing establishment level of computerization and Human Resources Information System adoption, the HRIS has not yet been successful in enhancing management of human resources in the public sector. The results obtained, go in line with the explanation provided by the proponents of the diffusion innovation theory. It could be understood that there is resistance to the adoption of new innovations (EMIS) due to non-acceptance of the technology perhaps because of the perceive complexity.

Discussion of hypotheses results

The use of SIS has a positive impact on administrative effectiveness.

The hypothesis for the first objective revealed a positive relationship, indicating that the increase in one variable leads to the increase in the other. In other words, as school administrator's use of SIS increases, the efficiency and overall effectiveness of administrative activities increases significantly within the public secondary schools in the Limbe municipality. This result works in line with the research investigations Smith et al. (20180 which reveals a significant positive correlation between the adoption of SIS and improvement in administrative efficiency such as reduced paperwork processing time and increase staff productivity.

The use of FIS greatly enhances administrative effectiveness.

The second rejected the null hypothesis that Financial Information System does not significantly enhance administrative effectiveness in public secondary schools in the Limbe municipality. This positive relationship between FIS and administrative effectiveness indicates that school administrators are familiar with the system (user friendly), it is compatible with some administrative processes, and they perceive a higher benefit in using the system than a manual system as demonstrated in the diffusion and Innovation theory and LUM. In this regard it can be concluded that financial Information system provides the relevant data and information that enables the right decisions to be made at the right time for effective administration of public secondary

schools in the Limbe municipality. In other words, the use of FIS in secondary schools for administrative activities has major long-term effects.

Hypothesis 3:

The third hypothesis also showed statistically significant relationship between the use of Human Resource Information System and effective administration in public secondary schools in the Limbe municipality. These results agree with Asafo-Adjei (2007) study which showed that, there is a positive relationship between HRIS and strategic Human resource task. In other words, HRIS plays a vital role in strategic human task as the findings were consistent with the organization's increase reliance on the use of HRIS in strategic human task.

C**onclusions**

The main purpose of this study was to examine school administrators' use of Education Management Information System for Administrative effectiveness in public secondary schools in the Limbe municipality. The study was guided by one main objective and three specific objectives and subsequently answered three questions. The objectives were. (i) Examine the extent to which Student Information System (SIS) is used for effective administration. in public secondary School in the Limbe municipality. (ii) Investigate the extent to which the use of Financial Information System (FIS) enhances administrative effectiveness of public secondary schools in the Limbe municipality. (iii) Assess the extent of the use of Human Resource Information System (HRIS) for administrative effectiveness in public secondary schools in the Limbe municipality. Based on the objectives of the study, the following conclusions are presented

Due to the practical acceptance of the alternative hypothesis, Student Information System significantly influences effective administration of public secondary schools in the Limbe Municipality. In this regard, SIS is very important in student enrolment, attendance tracking, grade management, communication with parents, and generating reports which is crucial in enhancing effective administration of public secondary schools. Student Information System dispense the relevant intelligence that enables school administrators to make the right decisions at the right time for effective school administration. This is based on the school administration's positive attitude toward implementing information communication technology as an innovation in student management as raised in the innovation diffusion theory by Rogers (2003), Thus, continuous improvements on Student Information System remains crucial for sustainable effective administration in public secondary schools in the Limbe Municipality

Regarding the managing financial data and procedures within secondary schools, financial information systems play a crucial role in increasing efficiency, transparency, and accuracy. Better decision-making, resource allocation, budgeting, and overall financial management are made possible by these systems. The positive relationship for this objective has confirm with previous research works that effective use of Financial Information Systems can lead to improved financial management practices in educational institutions thus a vital tool for administrative effectiveness. This is also an indication that school administrators are willing to adopt technological innovation as they perceive a relative advantage stipulated in the Diffusion innovation theory by Rogers (2003), and Lazy user model (Collan and Tetard 2007) all used in this work.

Courtesy of the pragmatic acceptance of the alternative hypothesis, Administrators, such as principal of secondary schools in the Limbe municipality, use the Human resource Information Systems (HRIS) as vital tools to perform administrative task such as payroll computation, electronic recruitment and selection, information dissemination and retrieval, staff information storage and retrieval just to name a few leading to proper decision making thus administrative effectiveness. Therefore, this study concludes that adopting and using HRIS in secondary schools encourages administrative effectiveness, particularly in terms of efficient personnel administration, efficient time management, and efficient financial management. Generally, EMIS significantly influences the effective administration of secondary schools as concerns student management, financial management and human resource management. For school, administrators to use these Information Systems efficiently and effectively they must acquire and possess technical skills training, system knowledge (conceptual skills), and human face (human relations skills).

Contribution to knowledge.

Practically, this research work contributes significantly in terms of guidelines for practitioners in the fields of EMIS applied to school administration. This study confirmed the adoption of EMIS in secondary school administration. This study could inform practitioners about the critical role EMIS plays to enhance effective administration. The findings can help administrators identify trends, areas requiring improvement, and allocate resources effectively. Specifically, the study brought out the following results for the use of SIS in effective administration in secondary schools in the Limbe municipality such as keeping track of the student class attendance, academic performance, extra-curricular activities, awards, health records and student discipline management are now easier. In addition, the significant impact of FIS to administrative processes will practically contribute to administrators of secondary education the knowledge on benefits of using

FIS in financial management tasks, thereby fostering accountability and sustainability in the secondary schools. Moreso this study could inform practitioners about HRIS effect on administrative effectiveness for instance, in providing valuable reporting capabilities that enable school administrators to analyse data related to staffing trends, turnover rates, absenteeism patterns, and other key performance indicators (KPIs). This data can be used to identify areas for improvement in recruitment strategies or training programs or to inform budgeting decisions related to staffing costs. By investigating these aspects, contributions can be given on how technology (EMIS) integration influences educational administrative practices and ultimately contributes to the overall success of secondary educational institutions.

This research work contributes to the theoretical domain of knowledge by confirming existing theories. EMIS needs a relative advantage and a user-friendly technology to positively change the staff behaviours to innovations. The results of this study confirmed Diffusion Innovation Theory (DOI) and Lazy user Model (LUM) as school administrators may be more willing to use EMIS if they are conscious of the significant advantages it covers over the manual task and using a system which demand less efforts to improves data collection process and makes decision making process optimal and efficient in secondary schools. The study went further to show the extent to which the use of EMIS influence administrative effectiveness using ordinal regression to test the hypothesis. It is honest to mention that almost no previous work has been found yet pointing to administrators' use of Education Management Information System for Administrative effectiveness in public secondary schools in the Limbe municipality. This study, however. contributes as the base knowledge for future research investigations in this domain.

Recommendations

Based on the findings of the study, the following recommendations are made:

A special unit at the Ministry of Secondary Education should be created to design, disseminate and harness an adapted EMIS and train personnel to manage information for the Cameroonian Education System. Such a unit if well-staffed, can coordinate the collection and distribution of information within the educational system.

It is suggested that the Ministry of Secondary Education offer school administrators and staff regular online support for EMIS through a permanent expert who can assist with EMIS.

There should be constant dialogue between EMIS staff and education stakeholders at various level.

To foster proficiency and competence development, school leaders should provide and conduct inductions for new staff members who use the EMIS.

The study recommends that public secondary schools must continuously improve on their implementation of SIS for effective student management.

Since there is no big data that cut across the three-education ministry, Government should create one for the education ministries, that will facilitate the follow up of educational statistics from one level to another and in a sequence while keep track of individual information.

Management should respond quickly to concerns of technical breakdown in any aspect of their Information System in the respective schools, as this will ensure continuous flow of administrative activities.

Curriculum developers should make computer education one of the core subjects to be offered by administrators of schools.

Suggestion for further study

Since research work was aimed at investigating the extent of school administrator's use of Education Management Information System (EMIS) for administrative effectiveness in public secondary schools in the Limbe municipality. It is suggested that.

1. Similar studies should be done in the other regions of Cameroon.
2. Conduct a comparative study on the use of EMIS for administrative effectiveness in public schools and private secondary schools in the Limbe municipality.
3. Similar studies should also be done in the primary school.

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APPENDIX 1

QUESTIONNAIRE

Good day sir/madam. My name is MUNAAH EMELDA AKWA, a student from the faculty of education, department of Curriculum and Evaluation (Educational Management) of the University of Yaoundé I, specialising in Administration and Inspection in Education. The aim of this questionnaire is to collect information from school administration board about my research study entitled **School administrator's use of Education Management Information Systems (EMIS) for administrative effectiveness in public secondary Schools in the Limbe municipality.** I therefore guarantee that the information collected will be treated confidentially and used only for this study. Kindly, help and provide accurate and real information to make this research a success. There are no wrong answers.

INSTRUCTION Make a tick (√) in the appropriate boxes in response to each question.

SECTION A. **BIOGRAPHCAL DATA OF RESPONDENTS**

GENDER: Male ☐ Female ☐

POSTION: Principal ☐ Vice Principal ☐ Bursar ☐

Experience (number of years of service): 0-10years ☐ 10-20 years ☐ 20+ ☐

Qualification: A/L certificate ☐ Bachelor's degree ☐ Master's degree ☐ PhD ☐

Age: 20-35 ☐ 36-50 ☐ 50+ ☐

Have you heard of EMIS? Yes ☐ No ☐

SECTION B : ENQUIRIES ON THE INDEPENDENT VARIABLE

EMIS is the system which integrates ICT, people, procedures for collecting, storing, manipulating, analysing and disseminating information for decision-making in the educational sector.

The following propositions have four (4) levels of appreciation. Tick the box most appropriate to your opinion.

4= Strongly Agree (SA), 3 = Agree (A), 2= Disagree (D), 1= Strongly Disagree (SD).

RESEARCH QUESTION 1**: To what extent is Student Information System (SIS) used for the effective administration in your school?**

No	STATEMENT	SA	A	D	SD
		4	3	2	1
1	Student's data are recorded in the database.				
2	Student's information is retrieved from the database.				
3	Enrolment of new student in the information system.				
4	I update data for continuing students in the information system.				
5	I use software for students' marks entry and storage.				
6	Students' marks stored in the software				
7	I generate lists of students per class from the database in case needed.				
8	I use information system to track students				
9	Students' report booklets after each assessment are accessible.				
10	Students' report booklets after each assessment generated.				

RESEARCH QUESTION 2**: To what extent is financial Information System used to enhance administrative effectiveness in your school?**

No	STATEMENT	SA	A	D	SD
		4	3	2	1
1	I use Information System for monitoring students' school fees payment.				
2	I manage revenue for the school.				
3	I manage expenses for the school.				
4	Financial transactions are recorded in the system				
5	I use software budget for school activities				
6	School financial statement is easily accessed.				
7	School financial statement is easily obtained.				
8	I generate school fee reports.				

RESEARCH QUESTION 3**: What is the extent of the use of Human Resource Information System (HRIS) on administrative effectiveness in your school?**

No	STATEMENT	SA	A	D	SD
		4	3	2	1
1	Incentives of staff are paid, using HRIS.				
2	Incentives of staff are managed, using HRIS				
3	Staff information is recorded in the software.				
4	Staff information is retrieved in the software.				
5	Staff appraisals are carried out using HRIS				
6	Staff promotions are carried out using HRIS				
7	I send Memos to staff members				
8	Recruitment procedures of staff is done with the use of HRIS.				
9	I use HRIS in the selection procedures of staff.				
10	I use HRIS to Monitor of staff members.				
11	Evaluation of staff members is done with the use of HRIS.				
12	I use the Information System to Forecast for staff needs.				
13	I use the Information System to plan for staff needs.				

SECTION C: ENQUIRIES ON THE DEPENDENT VARIABLE

No	STATEMENT	SA	A	D	SD
		4	3	2	1
1	I communicate with teachers and parents on school related issues.				
2	I organise seminars and workshops often				
3	Ensures that teachers monitor students' progress regularly through continuous assessment.				
4	I delegate task to collaborators on time				
5	Ensure proper planning of activities for the school.				
6	I design timeline activities for the school on time.				
7	I avoid delay in accomplishing scheduled programmes				

8	Encourages regular parents-teachers association meetings.				
9	I have concerns for the security of school property				
10	I ensure proper allocation of pedagogic resources to teachers.				
11	I ensure proper allocation of learning resources to students.				
12	School equipment are replaced when damaged.				

APPENDIX 2:

Krejcie and Morgan Table for Sample population

Table 3.1

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*

APPENDIX 3

RESEARCH AUTHORIZATION

REPUBLIQUE DU CAMEROUN
Paix – Travail – Patrie
*****
UNIVERSITE DE YAOUNDE I
*****
FACULTE DES SCIENCES DE L'EDUCATION
*****
DEPARTEMENT DE CURRICULA ET EVALUATION

REPUBLIC OF CAMEROON
Peace – Work – Fatherland
*****
THE UNIVERSITY OF YAOUNDE I
*****
THE FACULTY OF EDUCATION
*****
DEPARTMENT OF CURRICULUM AND EVALUATION

The Dean

N°058**/24/UYI/FSE/CD**

AUTORISATION FOR RESEARCH

I the undersigned, **Professor BELA Cyrille Bienvenu,** Dean of the Faculty of Education of the University of Yaoundé I, hereby certify that **MUNAAH Emelda AKWA,** Matricule **22W3201**, is a student in Masters II in the Faculty of Education, Department: ***CURRICULUM AND EVALUATION***, Specialty: ***ADMINISTRATION AND INSPECTION.***

The concerned is carrying out a research work in view of preparing a Master's Degree, under the supervision of **Dr. SHAÏBOU Abdoulaï HAJI.** Her work is titled: ***« School Administrator's Use of Educational Management Information System for Administrative Effectiveness in Public Secondary School ».***

I will be very grateful if you provide her all the information that can be helpful in the realization of her research work.

This Authorization is to serve the concerned for whatever purpose it is intented for.

Done in Yaoundé, le 02 FEV 2024

For the dean

Jacques Evouna

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QUESTIONNAIRE

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REPUBLIC OF CAMEROON
REPUBLIQUE DU CAMEROUN
GOVERNMENT HIGH SCHOOL LIMBE
LYCEE CLASSIQUE DE LIMBE
VICE PRINCIPAL
MINISTRY OF SECONDARY EDUCATION
MINISTERE DES ENSEIGNEMENTS SECONDAIRES

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