Determinants of Adoption of Education Management Information System of Secondary Schools of Chesumei Sub County

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Abstract: This study sought to establish the determinants of implementing Education management information system by secondary schools of chesumei sub-county Kenya. The Kenyan government through the ministry of education and the ministry of ICT has since 2008 created a policy for ICT adoption in the education system the adoption has been affected by varied factors. This study therefore investigated the determinants of EMIS adoption in secondary schools in chesumei Sub County. To establish the availability of centralization of data management in secondary schools of chesumei Sub County. The research used descriptive survey to gather data Kothari (2000). Target population; Chesumei sub-county has 42 schools both day and boarding. The sampled population was achieved by using 30% of the target population this led to 13 sample schools for the research that was randomly selected and purposeful selection of the Sub County director of education was done. The study used questionnaires, interviews and observation method to collect data. Validity of the content was determined through piloting. Test retest was also used to determine the reliability of research instrument the reliability was 0.78. Data was analyzed using qualitative and quantitative methods. The findings led to the conclusion that education management information system in chesumei Sub County is functional but not effective. In regards to the findings recommendations are therefore to the ministry of education to create policy framework for school level data management to create uniform adoption of centralized data management.

Keywords: education management information system, data management, centralized data.

1. Introduction

The incorporation of EMIS (Education Management Information Systems) in educational institutions has become increasingly popular in recent years. The goal is to improve different aspects of teaching and learning in education, EMIS refers to the use of digital tools and technologies to enhance the management, analysis, and accessibility of educational data. It also serves to promote communication and collaboration among the various stakeholders in the education ecosystem.

The United States of America is among the first nation to adopt EMIS for education it started implementing early versions of EMIS as early as the 1960s to collect data on students, teachers, and schools for planning and policymaking purposes, In the 1970s, EMIS was used for advanced reporting and analysis. In the 1980s, in the 2000s, EMIS increased its focus on student achievement and responsibility. Today, EMIS is used to support a wide range of educational activities, from data-driven decision-making to program evaluation and improvement. (Kevin, Parker, Davey (2014).

A. Statement of the Problem

The ministry of education and its partners are supporting the use of EMIS in all secondary schools in Kenya; this is emphasized by the 2006 national ICT strategy for education and training. The last mile electric connectivity programme was a government effort to take electricity to all rural schools however many schools in Nandi County especially chesumei sub county have lagged behind in adoption of EMIS this has been noted through delayed educational data transmissions and correspondence (MOE). The study therefore intended to investigate the determinants of EMIS adoption in secondary schools in chesumei Sub County.

B. Purpose of the Study

The purpose of the study was to investigate the determinants of EMIS adoption in secondary schools of Chesumei Sub-county.

C. Objectives of the Study

1. Establish the availability of centralized data management in secondary schools of Chesumei Sub-county.

D. Research Questions

1. How have the secondary schools of Chesumei Sub County established centralized data management system?

2. How does the ministry of education support the implementation of EMIS Data management in secondary schools of Chesumei Sub-county?

E. Significance of the Study

This study will be helpful to the ministry of education and other stakeholders on understanding the determinants of adoption of EMIS in secondary schools. The findings will help

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the policy makers and education planners on how secondary schools can adopt EMIS. The findings of this study will contribute to the advancement of knowledge on the determinants of adoption of EMIS in secondary schools. The findings shall also help researchers, trainers and trainees in implementing EMIS.

F. Limitations of the Study

The distance between schools might hinder faster collection of data and increase expenditure on travels. This shall be mitigated by research assistants and use of technology to help capture data.

Some schools will be doing exams however research schedule shall be done before or after exams.

G. Delimitations of the Study

The study intended to discover determinants to adoption of EMIS. The study included the principals, deputy principals, and ICT teachers and sub county director of education. The study covered EMIS skills of the school principals, administrative support, Centralization of data management and availability of EMIS infrastructure. This research was confined to secondary schools of Chesumei Sub County.

H. Assumption of this Study

That EMIS is the integral part of the education system and schools use it in management of data and information generation for decision making.

Another assumption is that the principals and their deputies will be positive and give credible and reliable feedback that will allow the study to have a clear picture on the challenges of EMIS

Third assumption is that the respondents will be available at the time when the interviews and questionnaires are administered.

The principals and deputies are trained and have skills in using EMIS for data management.

2. Literature Review

A. Introduction

This section reviews literature of similar studies done by scholars all over the world.it focused on the objectives of centralized data management.

The implementation of EMIS in education has been driven by the increasing availability of educational data and the need for data-informed decision-making. Schools and educational institutions generate vast amounts of data related to student performance, attendance, behavior, and curriculum planning. EMIS enables the collection, organization, and analysis of this data, thus providing educators and administrators with valuable insights to improve instructional practices, student support, and overall educational outcomes. This literature review aims to explore the current state of research and identify the benefits, challenges, and potential risks associated with the implementation and utilization of EMIS in education.

By critically analyzing studies, reports, and scholarly articles, the study will examine the various dimensions of EMIS in education, focusing on key theme of availability of centralized data management.

B. Availability and Efficiency of Centralized Data Management

Centralized data management is the storage of data in single location such as single central processing unit or mainframe computer it provides data source within the school and the ministry of education that include: student records, attendance, grades and assessment. The centralized system integrate and consolidate data from various sources, it should be flexible and be customized to unique needs of individual institution and also serve national purpose.

The application of Educational Management Information Systems in American education traces back to its early adoption for student information management. With the introduction of computer systems and databases, educational institutions were prompted to explore electronic methods of storing and organizing student records. This transition from manual record-keeping to EMIS not only enhanced operational efficiency but also contributed towards improved data accuracy and accessibility.

Moreover, as technology advanced over time, EMIS expanded its functionalities to encompass a broader range of administrative tasks within the field of education. (US department of education (2017), the transformation of school data management in America has been undeniable due to the rapid advancements in technology. With the implementation of digital systems and software, educational institutions have experienced a significant shift in the way they collect, analyze, and utilize data.

This transformation has not only streamlined administrative processes but has also resulted in improved efficiency and accuracy in managing student information (Cindy long (2015). One of the key benefits of technology in school data management is the ability to access, store, and retrieve information more efficiently. A study done in Milwaukee public school highlighted the following challenges to the full implementation of EMIS in the American schools.

The data entry became a challenge as tutors realized that data do not magically appear, ready-made there arose need set up and skilled people to key in data. They fought to build the internal stamina, scope, and create order to make data work for them. They have had to master skills on how to collect data, how to organize it, how to frame good questions for the data clarity, how to precisely analyze data, and how to apply data results appropriately and ethically.

Despite their progress and successes, the school teams concluded that by the end of the project they still needed to learn how to incorporate data seamlessly into their everyday operations and how to build their capacity to use data for decision-making school-wide and at various layers of education management levels. (Mason (2015) this scenario is replicated in most educational institutions and secondary schools of chesumei. The training of man power, system set up and understanding the intricacies of technology are possible obstacles to introducing technology to regular school system.

Research done on the effect of remote learning during the covid-19 pandemic on young children learning and academic behavior in Georgia found that application of data to decision-making presents an array of complex challenges for schools. Most school administrators and parents reported declines in student learning and academic behavior related to remote learning. Lack of Wi-Fi, technology, and digital literacy were often cited as barriers to learning. Challenges with remote learning were amplified for students and parents of vulnerable groups' (klosky, Gazmararian, Casimir, Blake (2022). In Kenya the covid-19 pandemic led to complete schools closure. In chesumei sub-county no learning took place in any form whatsoever the schools could not launch remote learning due to a myriad of factors i.e., lack of ICT infrastructure, lack of technological skills of both the teachers and parents challenge of getting online study materials and the organizational skills to run the system effectively.

The management of student data in China's universities has been significantly impacted by advancements in technology. The era of big data has made it more convenient and easier to manage university education (Zhao, 2022). However, this era also presents several challenges to the management of universities. One of the challenges is the potential loss of information when it is saved.

The implementation of internet of things (IoT) wireless network technology in China's universities has facilitated real time collaboration and correspondence between all education players, in additions, IoT technology offers avenues for higher learning institutions of china to improve their data management systems. The use of IoT wireless network technology by the universities allows the institution to be able to track student attendance, monitor their performance, and provide personalized learning experiences.

The Kenyan ministry of education in conjunction with Kenya national examination council (KNEC) has introduced a permanent learner assessment number that will enable it to track the progress of pupils from grade three to the tertiary level. This came due to the introduction of competency-based curriculum (CBC). This is intended to gather learner's data and progress through the academic life, it will also bring accountability in student funding. Despite this being a notable move teething problems that require consistent attention of the management is the inability of the school to run the system. Cyber cafes across chesumei are busy keying in school data on behalf of the principals.

The Kenyan data protection law, safeguarding potential misuse and loss of data captured in local data protection act (2019) Data protection regulation (2021) lacks definition since its technologically neutral making it difficult to enforce, it also doesn't cover the global data networks.

In Italy, the process of digitizing education administration and data management began in the late 1990s and the early 2000s (Callegari (2022). This involved the introduction of electronic systems to streamline administrative processes and improve data collection and reporting in schools and other educational institutions. One significant milestone in this regard was the launch of the "Anagrafe Nazionale Studenti" (National Student Registry) in 2001 (European commission country report Italy (2017).

The National Student Registry aimed to centralize student data and provide a standardized system for managing student enrollment, transfers, and other administrative tasks at the national level. Despite the perceived success budgetary allocation is not yet sufficient for its robust implementation. (Avvisati, F. Hennessy, Robert (2019) This phenomenon has been replicated in Kenya since the inception of EMIS the main challenge has been the government's inability to provide sufficient resources and funding to the ministry of education and schools for effective utilization and implementation of EMIS. Further efforts have been made to enhance and expand the use of information systems in education.

It is important to note that the implementation and development of EMIS in Italy just like Kenya and other countries in Africa have been gradual and have involved the collaboration of various stakeholders, including the Ministry of Education, regional education authorities, and educational institutions themselves. The specific timeline and extent of implementation may vary across different regions and educational settings. (Sasseville, Bastien (2004) this again brings in the geographical factor that is a major player in educational funding and equity.

According to World Bank report 2001, the introduction of EMIS to Afghanistan education system revolutionized learning and educational transition. Afghanistan is a country that has been ravaged by war that has been compounded by its rugged terrain! War ravaged schools made it worse for the girl child to access education. EMIS came in handy and provided Solutions that would otherwise be insurmountable with the above stated background.

The World Bank piloting of EMIS in the year 2001 accordingly revolutionized education especially in URUZGAN province that was quite inaccessible. EMIS has morphed into a centralized portal where learners' information can be accessed at a click of a button. Government collects data in far flung areas and keeps track of learners' progress. It has improved planning, funding and policy making. Parents with little education are able to participate in their children's education by using simple gadgets like phones. The centralized system was made user-friendly ensuring the learners, parents and other education players could fully utilize the system without feeling intimidated by the complexities and hard systems.

This empowered entire communities to participate and embrace education. Initially students' certification took three years or more but it has been reduced to three months, this has brought confidence to the system and enabled learners progress through stages of learning without much hindrance and prolonged waiting (WORLDBANK (2001). The Kenyan government through the introduction of NEMIS has attempted to provide centralized management of learners nationally and also provide platform for more data driven school funding. The introduction of NEMIS in Kenyan schools since 2017 was aimed to address various challenges in the education sector, including data management, monitoring, and planning.

NEMIS in Kenya has improved school infrastructure fund

allocation by providing a web-based data management solution that collects data and information from education institutions, processes and reports the status of designed indicators, it also provides the sector a solid ground for effective management to ensure that every learner counts, the ministry of education used NEMIS to validate and verify data profile of all public schools in the country to measure their capacities to host junior secondary schools (MOE). The centralized data management has proofed to have positive outcomes though it suffers implementation challenges like difficulty of use by the principals, lack of internet connectivity, System delays and wrong information being uploaded (Beja (June 11th 2019).

EMIS could transform the education sector and ensure political upheavals are not to the detriment of learners' progress. It has saved thousands of learners in conflict zones, who can now be able to achieve their academic dream and join the rest of the world in academic journey. The centralization of data management in Afghanistan has led to standardization of certification and validated the certificates. It has also made it easy to access records of learners from different corners of the province and continuously monitor their progress. This database allows for easy access and updating of data, leading to improved accuracy and availability of information while reducing duplication and manual record-keeping it has improved planning, funding and policy making.

Full EMIS implementation defeats corruption, cheating and mutilation of academic documents. Kenya still has a challenge in centralization of data management by having a lot of Data in fragmented format and county directors still get school information and data forwarded in the form of Whatsapp or phone messages. Government agencies like Kenya national exam council the ministry of education and other examination bodies for different institution like colleges and universities run separate systems therefore students' credentials are yet to be merged into one system.

This scenario is cascaded down to the school level where information management is still not run from a central point. Some of the factors that could contribute to such scenario are infrastructural challenges and inadequacies that require agent address through deliberate funding and conclusive policy framework by the government. Centralized data require budget both for installing and maintaining which requires balancing with the expected benefits. The centralized system can generate valuable information for both planning and decision making at the institutional level.

C. Theoretical Framework

This study employed the theory of diffusion of innovation (Rogers (1962).

The theory states that there are five stages of adoption of technology, the awareness, persuasion, decision, implementation and continuation. Does the society know of the presence of the new technology? Is it visible in the market? Do the users feel persuaded to the advantages of the new technology over the previous one and are they encouraged to use? The cost of implementation eases of use and the continued use and maintenance of the technology. This theory is important

to the study as it explains how new ideas are adopted and absorbed into society. The Level of flexibility and embrace of new technology depends on personalities and way of perceiving things.

This theory can be used best to explain the different developmental stages of EMIS in institution despite operating in the same jurisdiction and having a common start in the introductory stage. The four groups can be easily identified in the new technology of EMIS these are the;

Early adopters-These are people who are quick to adopt new innovation and its utility in society. This explains the lack of parity in EMIS adoption in different schools across the country. Some schools embraced the technology quickly and made it part of their school management and learning. This has led the institutions to be more advanced in technology use.

Early majority-These are the group who open the way for technology use in the wider society and general population. This when EMIS technology is being accepted as an integral part of data management in Majority of schools who have partially of fully adopted EMIS.

Laggards-These are people who have their own set ways of doing things and are risk averse mainstreaming the technology forces them to eventually adopt and use it. Some schools management believe their old way of doing things is good and do not see the need for change or bringing in complicated systems that they might not be enthusiastic to learn. This has led to some schools completely avoiding integrating technology in data management

Late majority-This group follows the early majority to adopting of technology after realizing the usability and efficiency of technology and interacting with it. They adopt the technology in school data management

The technology used should be reliable and be suitable for the task intended for the processes of data collection and transmission should support in building the accuracy and reliability of the Outcome. The three factors, skills, technology and processes are completely interdependent failure of one will lead to failure of the rest. If any of the three is missing then the development, efficiency and effectiveness of EMIS is greatly compromised (Bernbaum (2011). For the above three pillars to work, administrative support needs to be enhanced to ensure effective training funding of ICT infrastructure and creation of policy framework to enable conducive operational environment and a functional Education Management systems
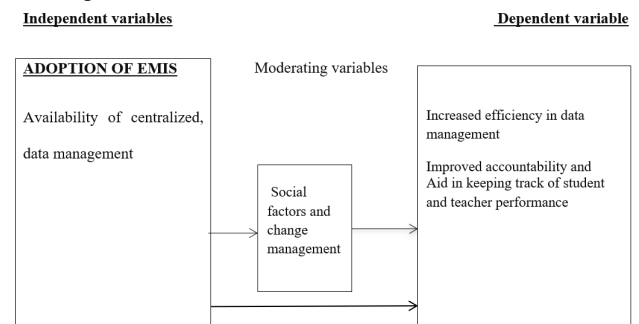
D. Conceptual Framework

Fig. 1. Conceptual framework

The implementation of centralized data management system will lead to improved efficiency in data management and accountability.

3. Methodology

A. Introduction

The section consists of research design, target population data collection procedure and instruments to be used in the study, validity, reliability of instruments and data analysis.

B. Research Design

Research design refers to the overall plan or strategy that a researcher uses to conduct a study. It outlines the specific methods and procedures that will be used to collect and analyze data, as well as the rationale behind those choices. A research design is important because it helps ensure that the study is both feasible and scientifically valid. It involves making decisions about the research questions, data collection methods, sampling methods, data analysis techniques, and other important aspects of the study. A well-designed research study can help ensure that the results are reliable and generalizable to the broader population. Strategy was chosen to integrate different elements of the study in a logical manner ensuring effective address to the problem.

The research shall use descriptive survey to gather data (Kothari (2000) this research design is suitable to fulfill the objectives of this study. It is hard to observe all the players in EMIS implementation and this method provides a cheap and effective way to collect data in a short time.

C. Target Population and Sample Size

A target population is a group of individuals chosen for research or study. The targeted population in this study was the primary implementers of EMIS and the gate keepers in its penetration in secondary schools of Chesumei Sub County. This is the unit of observation and collection to which a sample will be derived zikmund, Babin, Carr and griffin (2012) the target populations were principals, deputy principals and ICT teachers in secondary schools of chesumei sub-county.

This were drawn from the 42 secondary school which comprises the sub-county day schools; county, extra county and National schools. It comprises of 42principals 42deputies 42ICT teachers and one sub county director of education giving a total of 127 target participants. The Sub County education director was purposefully targeted to get perspective on the government effort on EMIS implementation in the sub county.

D. Sampling Procedure and Sample Size

1) Sample size

Sample size determination is the act of choosing the number of observations or replicates to include in a statistical sample. Sample size is the representation of respondents that was 30% sampled out of the target group of the study. (Krejcie &Morgan (1970) sample size of 40 respondents were picked from population of 130.One national school was purposely targeted to provide insight on the EMIS adoption in that category.

2) Sampling procedure

Sampling is a process or technique of choosing a sub-group from a population to participate in the study. Sampling procedure is the technique used by researcher to gather people, places or things to be used in research (kombo and Tromp (2006) sample size of 30% of the target population as advanced by krycle and Morgan (1970) was used, Chesumei has 42 schools 30% shall be 12.5 which is approximated to 13 secondary schools.

Simple random sampling procedure was used however Purposeful selection of the ministry of education Sub-county director in Chesumei was done due to the fact that the office could have information that other respondent might not have access to. Also, purposeful selection of one national school was done due to the different dynamics in funding and equipping of schools by the ministry of education.

E. Collection of Data

In research, collecting data is a crucial step in the process of gathering information to answer a specific question or hypothesis. Data collection refers to the systematic gathering of information from various sources, including surveys, interviews, observations, and experiments. The purpose of data collection is to obtain accurate and reliable information that can be analyzed and used to draw conclusions about the research question.

F. Data Collection Instruments

The instruments are research tools that encompass a wide range of instruments, techniques, and resources that researchers use to conduct their studies. These tools can vary depending on the research field and the specific objectives of the study (mugenda and mugenda (2003). Data was collected in the form of mixed open ended and closed ended questionnaires' to the deputy principals, principals and ICT teachers, an interview was conducted to the sub county director of education of chesumei and observation checklist was used to observe the presence of ICT infrastructure in the visited schools.

Questionnaire method was chosen because of ease of use in collection of data in large population, wide geographical area

Table 1
Target population

Zones	No. of principals	No. of deputies	ICT teachers
Kaptel	5	5	5
Lelmokwo	5	6	5
Kapsabet	5	6	5
Mutwot	7	7	7
Kosirai	8	8	8
Kamoiywo	6	6	6
Kiptuiya Sub County director	6	6	6
Total	42	42	42

and standardized method of analyzing. Additionally, it is cheaper and saves on time. The study collected data from participants simultaneously. This enhanced the generalizability of the research findings. The questions and response options were pre-determined and consistent for all participants; this ensured that each respondent was exposed to the same set of items. This reduced variability in data collection and increased the reliability of the results.it also provided a sense of anonymity and confidentiality to respondents.

These Questionnaires generated quantitative data, which lends itself well to statistical analysis. The structured nature of the questionnaire responses allowed for easy coding, entry, and analysis of data. Conducting interviews is a common method used in research to gather information from participants. It is important to ensure that the data collected is reliable and valid. The schedule for interview was organized for sub county director of education. Interview guide was prepared to get supplementary information on the determinants of adoption of EMIS. The tool was chosen because using interviews as a data research method is valuable for several reasons. Interviews allow researchers to gather detailed and in-depth information directly from participants.

By engaging in conversations, the study could explore participants' experiences, perspectives, and opinions more deeply than through other methods. Interviews provided an opportunity to gather rich contextual information. This contextual information added depth to the research findings. Interviews gave participants a platform to share their thoughts and experiences in their own words. This Research adapted the interview process and questions to suit the needs of the participant, allowing for a more personalized and tailored approach. This interactive nature of interviews allowed the study to explore complex topics in EMIS, uncover underlying issues.

By collecting data from multiple sources, such as interviews, surveys, and observations, the study can strengthen the validity and reliability of the findings or outcome. Interviews provided a qualitative perspective that complements quantitative data. Observation checklist was also used to confirm existing EMIS infrastructure. An observation checklist was prepared according to objective on EMIS infrastructure stating what is to be observed. Observations allowed researcher to study phenomena as they occur naturally. This naturalistic context enhanced the ecological validity of the research, making it more applicable to real-life situations.

This tool helped the study to stay focused on the specific aspects it needed to observe, while also ensuring that it did not miss any important details. The observation checklist was essentially the list of items or criteria that the research needed to observe during the study. It was used in a variety of settings, such as in classrooms, offices and working spaces. This ensured that the, research study collected data in a systematic and objective manner.

G. Validity of the Instrument

Research instruments are integral components of any research study. It is important to ensure that the instruments used are valid and reliable in order to obtain accurate results. Validity refers to the extent to which a research instrument measures what it is intended to measure. In other words, it assesses whether the instrument is accurately measuring the concept or variable under investigation. Validity of instruments measures the degree to which the outcome of the research is true and consistent, if it brings out the exact elements that is being measured. It tests the performance of the instrument and reliability of the results it produces. (Robson (2011)

The study used several ways to check for validity of research instruments. One way was through content validity, which involved ensuring that the questions or items in the instrument are relevant and comprehensive enough to measure the intended construct this one done through research experts at the university. Construct validity was another method used to check for validity of research instruments. This method involved testing whether an instrument measured what it claims to measure by comparing scores on that instrument with scores on other measuring instruments that assessed related constructs.it was possible to do so through piloting.

The piloting was done in 2 schools (4.7%) and 6 (4.7%) respondents this was adequate as (mugenda and mugenda (2003) state that a pilot study should consist of 1% to 10% of the sample population.it helped to identify items that could be misunderstood and needed to be eliminated also the inconsistencies and deficiencies in the questionnaires were corrected.

H. Reliability Test

Reliability testing is an important step in the validation of research instruments to ensure that they consistently produce consistent and stable results. Reliability refers to the extent to which a measurement instrument consistently measures the construct it is intended to measure. This study used Test-Retest Reliability to assess the degree of consistency between the measurements (Middleton (2019). This method involves administering the same instrument to the same group of participants at two different points in time The study selected participants from one school (2.3%) which was not included in research, they were issued with questionnaires to answer then the same questionnaires were reissued after one week.

The scores obtained from the two administrations were then compared using statistical measures such as correlation coefficients (Pearson's correlation) the coefficient alpha is equal to 1.and there is no errors. Thus, statistics equal to or greater than 0.7 is said to be good. (Hilton, McMurvay and Cozens (2004) the results yielded alpha 0.78 indicating the instruments were reliable.

I. Data Collection Procedures

The data collection procedure began with establishing a research design, which outlines the objectives, research questions, and hypotheses of the study. This helped in determining the data required and the appropriate methodology for data collection. The sampling method used was simple random of the 30% of the 129 participants of secondary schools of chesumei sub county Nandi. The participants were chosen to

ensure the sample represents the larger population accurately. The study developed the necessary instruments and tools to collect data. This included surveys, questionnaires, interview guides, observation protocols, and data collection forms. These instruments were designed to capture the required data accurately.

Before implementing the data collection, the researcher conducted a pilot study on the research instruments. This helped identify any issues or areas that needed improvement, ensuring that the instruments are reliable and valid. The actual process of gathering data began based on the chosen methods. This involved surveys and questionnaires administered in person, Interview was conducted face-to-face, with the purposely selected candidate data was also collected through observations using checklist the collected information was recorded systematically. This involved entering responses into a database, transcribing interviews, and documenting observations.

Once the data was collected, it underwent validation and cleaning processes. Errors were checked, inconsistencies, or missing values in the collected data and were addressed accordingly. This ensures the data is accurate and reliable. The data was validated and cleaned, various statistical and qualitative analysis techniques were applied to derive meaningful insights and draw conclusions based on the research objectives and questions. Data was analyzed using both quantitative and qualitative data. Qualitative data from the questionnaires were analyzed using SPSS application.

Cross tabulation were used to analyze relationship between variables. The reasons for choosing both methods were to improve in both reliability and validity (Babbie (1986) data was analyzed and interpreted, and the findings are presented in a comprehensive report.

J. Availability of Centralized Data Management

The respondents were requested to share their views on a four-point Likert scale starting with never, occasionally, partially, and fully. This was to establish the extend of centralization of data management in the selected institutions. The key used was: Never, =0ccassionally, =partially, =fully

Table 2

Resource Software	never	occasionally	partially	fully	Mean	dev.
I use word to create lesson notes and learning	2 (7.4%)	8(29.6%)	10(37.0%)	7(25.9%)	2.81	.904
Use spreadsheet for records, exam analysis, Time tabling	2 (7.4%)	8(29.6%)	10(37.0%)	7(25.9%)	2.96	.999
I use email to correspond with colleagues and The ministry of education	--------	6(22.2%)	6(22.2%)	15(55.6%)	3.83	.816
Have centralized data storage for learners And human resource	3 (11.1%)	6(22.2%)	7(25.9%)	2(7.40%)	3.38	.867
I use ICT for school financial management and Electronic fee payment	-----	4(14.5%)	8(29.6%)	15(55.6%)	3.40	.733

Results indicate that the availability of centralized data inadequate. Those who never used word in creating lessons were 2 at 7.4% a this is due to lack of sufficient computers to be used by individual teacher for lesson creation and planning 8 respondents that is 29.6% used it occasionally maybe for lack of demand to use the application or insufficient skills attributed to insufficient ICT infrastructure in secondary schools (Swarts& Wachira 2010) 10 respondents at 37% used the application partially and only 7 at 25.9% stated they use it fully. The schools that have adopted fully are likely to have large learner population creating demand for efficiency and the school finance allows it to purchase the EMIS hardware and software this agrees with Kayombe (2017) cost of EMIS ownership is beyond the reach of most schools.

Use of spread sheet for exam analysis and time tabling was at insufficient as some schools still use manual methods 2 respondents 7.4% stated that they have never used the spreadsheet, this could be due to lack of the right applications and infrastructure. There is also a possibility that lack of awareness to the products in the market could contribute to the slow uptake and use of the technology, 8 (29.6%) stated that they use it occasionally this could be due to the limited ICT knowledge and lack of expertise on use of application also discouraged, 10(37%) stated that they use partially while 7(25.9%) indicated that they use it fully.

The economic disadvantage of under enrolled and underfunded schools and the rural nature of chesumei Sub County contributed to the inability to acquire the applications since they are purchased from the vendors with undefined market price or upgrading the existing ones. This phenomenon agrees with the observation that application use and efficiency change so fast that upgrading the system becomes a constant and expensive venture and also the radical changes in the education system it is likely that requirement will themselves have changed by the time EMIS is implemented (lovey (2010) that small schools are unable to keep up and soon fall back to the old traditional system.

This agrees with the observation made by Kayombe (2017) on the cost of ICT ownership. Emails for correspondence was ranked as the most used, all respondent indicated that they had used Email at one time or the other. Possible reason are social factors due to the respondents familiarity and availability of smart phones also due to demand from the employer to correspond by EMAIL.15 respondents that is 55.6% stated that they use email fully in correspondence with employer and ministry of education, 6 respondents at 22.2% indicated partially while 6 respondent at 22.2% indicated occasionally.

Respondents noted the time saved when using electronics for correspondence, and that the platform is easy to use and does not require complicated skills to handle this agrees with the theory of diffusion of innovation Rogers (1962) the cost of implementation and the ease of use and maintenance of the technology .Availability of centralized data storage was not significant with 7 respondents 25.9% having partially installed it 6 respondents at 22.2% occasionally use, 7(25.9%) have partially implemented just 2 respondents at 7.40% have fully functional centralized system.

The study noted that national school and those with high population are likely to have the system fully functional due to higher funding from the government, school fees from parents

and other available resources. Establishing and maintaining centralized data management require financial investment in the hardware and software, training of the end users and a robust maintenance team, this maybe out of reach for most schools. The infrastructural establishment, reliable internet connectivity and power supply are essential for effective centralization. The sub county director noted the lack of vote head in the government funding structure for ICT functions.

This agrees with the observation that the failure of centralization of data in schools is also attributed to insufficient funding and ICT infrastructure in secondary schools swarts& Wachira (2010) the respondents were required to state the rate of use of ICT for financial management. Most schools recorded progressive use of ICT in financial management15 (55.6%) indicated that they have fully implemented EMIS in finance, 8(29.6%) have partially used4 (14.5%) use it occasionally. The impressive usage of ICT in finance could be due to availability of service providers like telecoms, banks providing free automation of fee payment technology and the demand from parents to ease paying of fees due to their increasingly demanding schedules.

These have all contributed to the shift to the use of technology. All schools are engaged in digitizing their system but are in different stages of progress, the schools who have not adopted much of ICT in their financial management identified financial constraints as a major factor and could not afford the initial cost of the hardware, lack of expertise to run the digital financial system for accounting may have brought hesitation in the adoption of the technology few principals could use accounting spreadsheet sufficiently, security and privacy concern about school financial data and personal information were also an important factor.

According to the sub county director the ministry is keen to ensure that schools adopt digital financial management as it improves accountability. The introduction of NEMIS was aimed at enabling the government monitor enrolment in schools and ensure all funds channeled to a learner are accounted for. Those that have implemented ICT fully in financial management have recorded easier collection of fees, improved tracking of expenditure and reduced wastage. This agrees with the Davis (1989) of the increased adoption of technology due to perceived usefulness.

4. Conclusion

This paper presented determinants of adoption of education management information system of secondary schools of chesumei sub county.

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