DATA MANAGEMENT AND DECISION-MAKING IN SELECTED SECONDARY SCHOOLS IN NTUNGAMO MUNICIPALITY

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UGANDA CHRISTIAN UNIVERSITY

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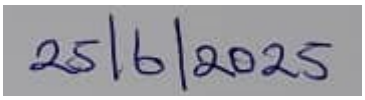
DECLARATION

I, **Atukundiire Smart** declare that this is my original work and it has never been submitted to any institution for the award of a diploma, a degree, or a master's.

Signature  Date 

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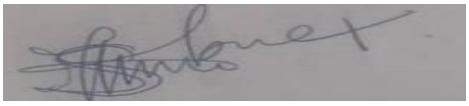
APPROVAL

This dissertation has been done under my supervision and it is ready for submission for the ward of Masters of Education in Administration and Planning.

Signature  Date: 30/06/2025

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DEDICATION

This dissertation is dedicated to my dear husband and my children. May the Almighty God continue protecting and blessing you all.

ACKNOWLEDGEMENT

First of all, my heartfelt appreciation is expressed to Almighty God for the gift of life and education to me.

To my deepest husband, my praying partner, and my number one supporter. Thank you for being my anchor, for believing in me, and for your undivided support in making my dream come true. Your prayers gave me courage and helped me to stay faithful in all my endeavors.

My profound gratitude is addressed to my supervisor Mr. Turihohabwe Jack for his invaluable guidance and insightful feedback throughout the research dissertation writing. His expertise and encouragement have been instrumental in shaping the direction and quality of this work. To you, I say thank you and God bless you.

It is more important to thank the administration, lecturers, and employees of Uganda Christian University for allowing me to achieve the purpose.

Glory be to the Lord

LIST OF ABBREVIATIONS

DMS	Data Management Systems
EDMS	Electronic Data Management Systems
EMIS	Educational Management Information System
ICT	Information Communication Technology
NPE	National Policy on Education
PCs	Personal Computers
PTA	Parent Teachers Association

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ABSTRACT

This study was limited to the data-driven management and decision-making in selected secondary schools in Ntungamo Municipality. The purpose of the study was to assess the relationship between data management and decision-making in selected secondary schools in Ntungamo Municipality. The objectives of the study were: to identify the effect of manual data management on decision-making in secondary schools, to investigate the effect of electronic data management on decision-making in secondary schools, and to examine the relationship between data management and decision-making in selected secondary schools. A cross-sectional research design was used and data was collected using interviews and questionnaires. According to the study findings on the effect of manual data management on decision-making in secondary schools were: manual data management in schools helps in achieving continuous school improvement in terms of increased student achievement, manual data is used for accountability purposes, manual data use plays an important role to produce proof whether actions taken by teachers and school leaders have added value for changing teachers classroom practices and improve student learning and achievement, helps in school development that is achieved when teachers and school leaders use data to determine how the school and stakeholders. The study findings on the effect of electronic data management on the decision-making of secondary schools were: electronic data management helps administrators require information to base on for decision-making to carry out their official duties and responsibilities efficiently and effectively in a transparent manner, electronic data management also act as raw materials for research in various disciplines in the schools to facilitated development, electronic data management has long been seen as the graveyard of information to base on for smooth running of the school. The study findings on the relationship between data management and decision-making in selected secondary schools revealed that there is a significant positive relationship existed between data management and decision-making in selected secondary schools of Ntungamo Municipality. The study recommended that schools should consider transitioning from manual data management to electronic systems since electronic systems offer efficiency, accuracy, and scalability that can greatly enhance decision-making processes and schools need to provide training and professional development opportunities for staff members to ensure they are proficient in using electronic data management tools effectively.

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CHAPTER ONE
INTRODUCTION

1.0 Introduction

Study background, problem statement, study purpose, study objectives, research questions, study scope, and study significance are all covered in this chapter.

1.1 Background of the study

1.1.1 Historical perspective

The advent of the file cabinet in 1898 marked the beginning of data management in the latter part of the nineteenth century (Tan et al., 2016). The vertical file system was created in 1899 by Edwin Grenville Seibels, who arranged paper records in drawers housed within stacked cabinets. For most of the 20th century, these cabinets would continue to be the primary means of keeping records in schools (Morley & Parker, 2014). Still, there were a lot of serious issues with this method. With their large footprint, file cabinets were an inconvenient way for the school to store and organize its limited office space. Furthermore, the process of finding particular documents amidst stacks of paper and manually completing paper forms took a significant amount of time and effort.

In the annals of data (document) management, Bid's Photocopy Service started to take center stage in the 1900s. Specializing in the taking, editing, storing, and endless replication of documents on microfilm. The Buffalo Museum and the Erie County Historical Society were among the first clients of Bid's, which opened on Elmwood Avenue in Buffalo, New York, in 1939 (Haitham et al., 2021).

However, the 1980s saw a significant shift in the history of data management due to the increased accessibility of computer technology in Western nations like the United States and Europe, particularly Britain, France, and Germany (Dayhoff & Uversky, 2022). Organizations

are now able to electronically store and manage data in centralized mainframes thanks to the development of servers. The inception of electronic data management systems (EDMS) occurred at this point. In the meantime, printed documents could be converted to digital documents thanks to the development of scanners. With the advent of personal computers (PCs), educational institutions can now produce and keep papers on office computers (Hendriyati et al., 2022).

The advent of Personal Computers in 1975 triggered a transition from analog to electronic data management. On the other hand, there was a lot of unorganized distribution of personal computers, or PCs. Deficits in the network led to the absence of security, audit trails, and version control. Improved document management systems were required (Dimlioglu et al., 2023). A word processing center operator was the only person capable of managing an EDMS in the 1980s. The advent of more user-friendly technologies in the early 1990s made it possible for knowledge workers to manage DMS independently. Direct client collaboration was now possible with DMS.

1.1.2 Theoretical perspective

Taylor's (1909) management and organizational theory guided the study's data utilization. Data are changed into information, and information is then transformed into knowledge that may be used to make decisions, according to Taylor (1909). Since data are unprocessed, they may be present in any form, whether or not it is useful. The comprehension of the individual examining the material determines whether or not it becomes information. The idea was pertinent to the research because it suggests that integrating data-driven strategies with organizational management and leadership principles can make educational establishments more productive and efficient.

1.1.3 Conceptual perspective

Books, files, schedules, admission and attendance records, logbooks, syllabi, work plans, visitor's books, disciplinary books, student report cards and sheets, staff records, educational institutions cash book, school equipment/material record, meeting minutes book, etc. are all considered data in this study (Lai & Schildkamp, 2013). According to Lachat (2012), management is the coordination of an organization's material and human resources to achieve its goals through the production of outputs by organizing, directing, controlling, and planning. Making decisions is the process through which a person chooses the alternative or course of action that best suits their requirements (Hesselbarth, & Schaltegger, 2014).

Schools strive to offer high-quality instruction. To achieve this objective, precise data must be gathered, examined, archived, and applied to the process of making decisions. The reason for this is that high schools are intricate establishments that frequently cater to a greater number of pupils and feature an array of departments, academic programs, and extracurricular activities. All of these aspects of school administration necessitate the efficient use of data, and the application of statistical information in school management has been prevalent, particularly in developed nations such as the United Kingdom, France, Germany, as well as Italy (Marsh & Larson, 2014).

To improve the achievement of educational objectives, secondary school management involves data collection, processing, retrieval, preservation, and utilization (Dagnew et al., 2020). It calls for careful data handling and a high level of accountability. Like in any other company, secondary schools use a cycle of data management that involves head teachers, educational professionals, and students. The fact that teachers and students manage and maintain the data by hand makes it challenging to process, retrieve, and use.

1.1.4 Contextual perspective

Since secondary schools are responsible for preparing all students for success in both academics and extracurricular activities, they face a significant challenge from a growing focus on standards of learning, equity, continuous enhancement, and responsibility (Ross, 2010). Most schools do not have the information system capacity needed to use data strategically to address equity concerns, find gaps in success, and assess the efficacy of certain programs (Love, 2011). According to Abebe (2012), the Kenyan government has just recently begun to emphasize the value of data management and decision-making at the school level. In Kenya, data management research is essentially nonexistent. To collect relevant data for learning enhancements, teachers are supposed to evaluate pupils fairly and appropriately by utilizing a variety of alternative assessment methods as opposed to tests and exams, according to the Ministry of Education (2015).

A suitable data management system is present in Uganda's high-achieving schools (Ross, 2010). Effective Educational Management Information Systems (EMIS) have been linked to schools that perform well on exams and extracurricular activities; in contrast, schools with poor data management practices perform poorly, though there may be other contributing factors as well (Simpson, 2011). There are a number of reasons why data from schools is delayed, according to the Kenyan government's Sessional Paper No. 1 of 2005 on Policy Framework for Learning Training and Research: There is a lack of coordination at all levels; teachers and departments report figures that contradict each other; and educators lack formal training in data analysis and use, leaving them with a limited understanding of how to use data to support improvement and make decisions. He also suggests that the government build institutional human capacity to encourage the use of Information Communication Technology (ICT) in education, training, and institutional management in order to increase the efficacy of educational administration and

management at all levels, from the classroom to the school to the sector as a whole (MoES, 2015).

According to Gummer (2013), teachers have access to data in many secondary schools, including those in Ntungamo Municipality. However, they frequently struggle to know how to use this data because of inadequate professional development regarding the data's source or application in assessment. Therefore, data management remains a stressful, learner-centered educational paradigm shift for which the majority of teachers lack the necessary preparation and for which many questions, such as whether or not data handled is being used to make decisions, remain unanswered. Do the statistics currently available aid in rostering improvements that would raise student achievement? Thus, an investigation of this matter is required.

1.2 Problem statement

Since student performance determines whether an educational institution succeeds or fails, schools must manage student affairs using an adequate data management system (Dieterle et al., 2012). The use of data in decision-making has been receiving increasing emphasis in recent years. According to Ehren and Lai (2012), schools are being held more and more responsible for the education that they give, for raising student achievement, and for producing data demonstrating the return on investment for modifications to professional development, instruction, and assessment. It has been demonstrated that school administrators cannot effectively plan their institutions or meet their goals and objectives if they do not use data in their decision-making (Seikaly, 2010). Various studies have been conducted by Pelekamoyo and Silimbwa (2017), Poortman and Schildkamp (2016), Vanlommel and Schildkamp (2018), Brown et al. (2017) on data management. However, no research has focused on data management and decision-making leaving out a gap to fill using the secondary schools in Ntungamo Municipality. Furthermore, in underdeveloped nations such as Uganda, all secondary schools ought to prioritize data in their planning to provide universal access to high-quality

education. The selected secondary schools in Ntungamo Municipality are currently behind in the implementation and utilization of data that would aid them in decision-making, despite the knowledge of how valuable data management is for efficient decision-making and planning (Education department Ntungamo Municipality report, 2020). As a result, data management has suffered in these schools, and this needs to be fixed because, in the absence of data management, administrators and teachers in secondary schools are unlikely to make the best choices regarding, for example, recognizing and resolving issues that require attention and tracking their progress toward their objectives. Thus, the circumstances compelled the researcher to do a study.

1.3 Purpose of the study

The purpose of the study was to assess the relationship between data management and decision-making in selected secondary schools in Ntungamo Municipality.

1.4 Objectives of the study

The study was guided by the following objectives;

i. To identify the effect of manual data management on decision-making in secondary schools in selected secondary schools in Ntungamo Municipality
ii. To investigate the effect of electronic data management on the decision-making of secondary schools in Ntungamo Municipality
iii. To examine the relationship between data management and decision-making in selected secondary in Ntungamo Municipality

1.4.2 Research questions

The study was guided by the following research questions;

i. What is the effect of manual data management on decision-making in secondary schools?

ii. What is the effect of electronic data management on the decision-making of secondary schools?
iii. What is the relationship between data management and decision-making in selected secondary schools?

1.5 Scope of the study

1.5.1 Geographical scope

The Ntungamo District's Ntungamo Municipality served as the site of the research. From west to east, Mitooma District, Sheema District, and Rwampara District abut Ntungamo District to the north. Isingiro District lies to the east, Rukiga District lies to the south, and Rukungiri District lies to the northwest.

1.5.2 Content scope

The study's scope was restricted to the Ntungamo Municipality's chosen secondary schools' use of data-driven management and decision-making specifically on the effect of manual data management on decision-making in secondary schools in selected secondary schools, effect of electronic data management on the decision-making of secondary schools and the relationship between data management and decision-making in selected secondary in Ntungamo Municipality.

1.5.3 Time scope

The study's ten-year timeframe was from 2010 to 2020. This time, the researcher was able to obtain the data necessary to support the study's accurate results.

1.6 Justification of the study

The study on data management and decision-making in selected secondary schools in Ntungamo Municipality was justified by the growing need for evidence-based practices in school administration. Despite the availability of data, many schools still made critical decisions based on intuition rather than systematic analysis. This undermined planning,

resource allocation, and academic performance. Investigating how data was managed and used provided insights to improve operational efficiency and accountability. The findings will inform policy and capacity-building strategies for better educational outcomes.

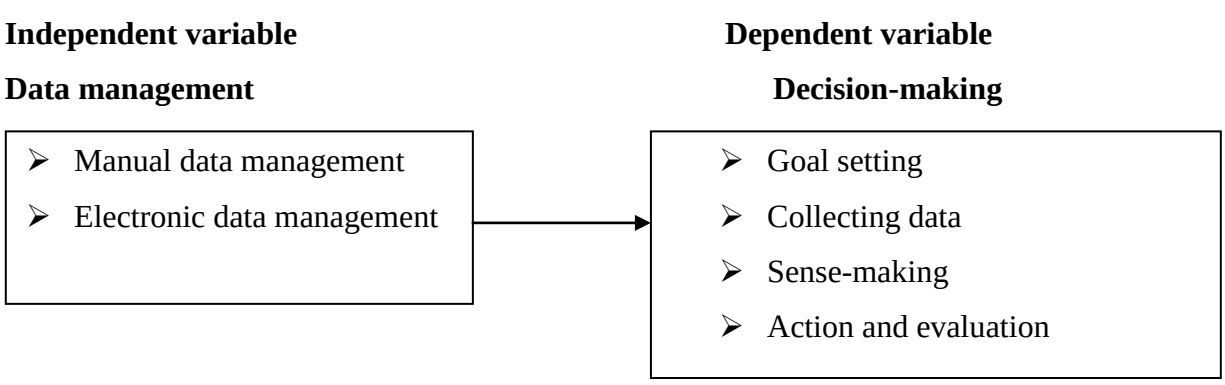
1.7 Significance of the study

In terms of gathering information, analysis, and utilization, data-driven decision-making is the primary determinant of the education sector's growth. Thus, it will be helpful to evaluate data-driven decision-making and management in particular secondary schools and offer potential recommendations.

The study might assist those responsible for developing policies and strategies about education to better address the obstacles secondary schools have when making data-driven decisions.

For upcoming academics who might produce further research articles on relevant themes, the data used in this study could be used as a literature review.

1.8 Conceptual framework



Source: Adapted from Nayon, (2017) and modified by the researcher (2021)

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter summarizes and discusses the research that other academics have done on the subject. Information for this study was gathered by the researcher from a variety of reliable sources, including academics, publications, articles, journals, and websites.

2.1 Theoretical perspective

The management and organizational theory of Taylor (1909) offered direction for the use of data in the study. According to Ackoff (1989), data are converted into information, which is subsequently transformed into understanding that may be utilized to make decisions. Unprocessed data can exist in just about any state, regardless of their utility. Whether or not the item becomes information depends on the examiner's level of understanding. Information is created when data is contextualized and given meaning. It is data that shows the relationships between context and information and aids in our ability to understand and organize our surroundings.

However, by itself, it doesn't matter for the future. The collection of information that has been ultimately deemed worthwhile and used to guide behaviour is known as knowledge. Knowledge creation is a sequential process. When it comes to test data, a teacher's knowledge is proven by her ability to identify and address the connections between her students' performance on different item-skills analyses and her instruction in the classroom. A range of data sources, such as student assessment results, observations from a limited number of classes (Carlson et al., 2011), instinct, and "the instructor experience" (Schildkamp & Kuiper, 2010; Timperley & Phillips, 2003), are used by schools to guide their decisions.

2.2 Effect of manual data management on decision-making in secondary schools

Manual data management at educational institutions is primarily used to support ongoing school improvement through higher student accomplishment (Oweis, 2018). There could therefore be three different scenarios involving data use given the manual data that is now available in schools: no data use, inadvertent data use, and purposeful data use. Several factors may determine whether schools use manual data at all or very little. Too frequently, inadequate and unavailability of manual data may be the cause.

Even in cases where manual data is accessible, it may be abused or used inappropriately. When educators and administrators are not equipped with the information, abilities, and mindset to deal with data, misusing it can lead to incorrect diagnoses of issues and incorrect prescriptions of solutions based on erroneous premises (Hoffmann, 2019). The deliberate use or misuse of manual data is the second type of undesirable data use. For instance, when schools are faced with a high-stakes accountability system with anticipated liabilities for noncompliance and when the support offered to them is insufficient, they may strategically use or abuse manual data. Both of these scenarios may encourage schools to fabricate data and teach to the test, narrowing the curriculum (Cotton, 2018). The researcher must, however, close a gap in the literature wherein the impact of data misuse on decision-making in educational institutions is not adequately addressed.

With the ultimate goal to enhance student outcomes, the intended manual data use is defined as occurring when administrators and educators have first-hand experience with manually operated gathering, analysing, interpreting, and implementation regarding problems that are at stake in transforming how the educational institution is run and how teachers engage in instruction in the classroom (Dogan, & Adams, 2018). Because manual data use is connected with intervention tactics in changing a school's practice, it is believed that this type of data usage will positively improve pupil comprehension as well as achievement.

Manual data is used for the development of schools (e.g., policy planning and growth), instructional improvement (e.g., altering the teaching method such as differentiated instruction for particular student groups), and accountability (e.g., communicating to inspectorates and parents). The researcher must close this gap since manual data is not described in terms of how it is used for policy formulation, development, and communication with inspectorates.

Manual data is used for accountability

Manual data refers to the use of data by schools to generate proof of the efficacy of their instruction and learning. Schools can use manual data to communicate with students, teachers, parents, including educational inspectorates. Examples of this type of data include assessment and final test results, classroom observations, and teacher performance evaluation findings (Palmaccio, et al., 2022). They assess instructors' effectiveness using manual data, and they encourage them by recognizing their accomplishments and advancements. Additionally, schools can track the degree of target achievement in their performance reviews by using manual data (Duckworth, 2019). Schools employ manual records for accountability reasons since educational inspectorates oversee them and, in exchange, they must abide by rules by reporting their performance regularly and taking advice to heart. Nonetheless, the researcher must handle this scenario because it is unclear how personal information is used in schools for accountability reasons.

Overall, the use of data manuals is crucial in demonstrating if the measures made by educators and administrators have improved student learning and accomplishment and changed how teachers conduct their classes (Rissanen, et al, 2019). Because of all of this, schools must use manual statistics to demonstrate to parents and kids that the instruction they offer is up to standards. More significantly, manual utilization of data can protect schools' accountability in the context of distributed educational reform, like school improvement, since accountability is viewed as a way to give schools the authority to gather information from their environments,

evaluate and interpret that information, and take appropriate action based on it. Nonetheless, the researcher must handle this scenario because it is unclear how personal information is used in schools for accountability reasons.

Manual data is used for school development

When educators and administrators use data to decide how the school and stakeholders should operate in light of the present emphasis on educational quality, school development can achieve its goal (Stillman, 2018). For instance, student achievement data can be utilized for a variety of purposes, including keeping an eye on how well the school is operating, deciding on curricula, starting conversations and discussions with parents, teachers, students, and administrators, guiding professional growth through different approaches, reflecting on one's functioning by assessing teachers' performances, creating and planning school policies, and more.

The researcher must address this because there isn't a clear method for creating and organizing school policies or evaluating the work of instructors in the classroom. Data from assessment manuals can offer valuable insights into how various student groups are learning, and they can serve as a foundation for modifications to policies about student learning and achievement, testing, instructional schedules, and groupings of students (Reynolds, et al, 2021).

Additionally, using manual data collection improves teachers' effectiveness when they plan, carry out, and evaluate professional development using a variety of data kinds and sources. Additionally, by defining their objectives and priorities, statistics can help schools understand their strengths and pinpoint areas in which they require to make adjustments. Nevertheless, it is not clear how the manual data assessment will be accomplished to offer significant insight into the learning of various student groups; as a result, the researcher must solve this problem.

Manual data is used for instructional improvement

The strongest justification for how employing manual data can enhance education comes from the essence of good teaching (Reichstein, et al., 2019). It is suggested that reflective instruction be grounded in data rather than arbitrary presumptions to be effective. Instructors can carry out several tasks linked to improving instruction by using assessments and other manual data sources. To enhance students' achievement patterns, for instance, a teacher might need to concentrate on their reading comprehension abilities (Stole, Mangen, & Schwippert, 2020). Teachers can effectively address decisions about which curriculum area needs more focus for examination, which student groups require extra attention for academic help, and what type of educational arrangement best meets the needs of particular student groups by using data. The researcher must close this gap since it is unclear how improvement in instruction can be accomplished using manual data.

Additionally, manual data are crucial for tracking the success of interventions and justifying whether the actions of educators and administrators such as creating new lesson plans for particular student groups or evaluating the efficacy of professional development programs have a positive impact on school improvement as measured by improvements in student outcomes (Schildkamp, 2019). Teachers should, however, have sufficient understanding of both what they and their students must acquire information as well as what specifically needs to be done differently within the educational setting before deciding to alter the format and content of the lesson.

In the field of instructional improvement, manual data collection plays a critical role in assessing how well learners are learning within the educational system (concerning general expectations, curriculum goals, and readiness for life after graduation); and whether specific knowledge and skill gaps exist among students; whether certain population subgroups perform inadequately; which factors are linked to student accomplishment; and whether student achievements vary over time (Giovani, 2021). However, the qualities of the data, how it is

utilized, and whether enough assistance is provided for schools to develop will determine whether the results of using manually collected information for instructional reasons are favourable or negative. However it is not made clear how much help is needed for schools to use manual data to develop; as a result, the researcher must close this gap.

Workers need knowledge to perform their official tasks and obligations successfully, transparently, and efficiently (Lozano et al., 2020). Almost the only trustworthy and legally verified source of data that may be used as proof of decisions, activities, and transactions within an organization is manual data, which is one of the main sources of information. The purpose of manual management of data is to guarantee that employees engaged in various processes have access to the data they require when needed. If the staff needs the information, it is unclear how they will obtain it.

In addition to serving other purposes, manual data serve as a source for science study, which is a crucial component of educational advancement across a range of fields. Additionally, written records can be utilized as a source of information for the school's strategic planning needs (Longhurst et al., 2020). Therefore, the service that manual data management provides is crucial to the success of schools as well as their staff, namely instructors. The main purpose of manual information management is to make it easier for data to move freely throughout the whole school. The management still has the primary responsibility for making sure that the school's manual data are preserved for future use. Nevertheless, the researcher must fill in this gap by demonstrating how the manual data can be preserved for future use in the school.

Manual data management procedures serve as a kind of control that supports other control procedures, like both internal and external auditing (Sun, 2018). When fraud is discovered, the manual data environment provides avenues for fraud to be committed, and it can also give investigators a trail to follow to identify the source of the school fund embezzlement. However,

manual data must be accessible to be helpful in this capacity (Mannering, et al., 2020). For information retrieval, activity documentation, and regulatory compliance, the organization maintained manual data. It must be addressed because, at present, there is no explanation for how companies can maintain manual data for information retrieval.

A company requires long-term records attesting to how funds were raised, distributed, managed, and used (budget) (Gasevic, 2018). This comprises manual data that documents the school's financial transactions as well as budget data that shows how income and expenses were budgeted. The researcher must address the lack of information on how different manual data about the school's financial transactions might be gathered and safeguarded.

2.3 Effect of electronic data management on decision making of secondary schools

Improved decision making

Information is necessary for administrators to perform their official tasks and obligations effectively, transparently, and efficiently (Pangrazio, & Selwyn, 2019). One important source of information is electronic data management, which is also practically the only legally verifiable and trustworthy source of data that can be quickly retrieved and used as proof of decisions, activities, and transactions within the school. Electronic data management's job is to make sure employees engaged in various processes have access to the data they require when needed. The researcher must answer this since it is not made clear how staff members involved in various operations can accomplish this.

An Information Resource for Strategic Planning Purposes

Electronic data management serves a variety of purposes, one of which is serving as a raw material for science research, one of the key components of educational development across the disciplines. Moreover, the school might employ electronic data management as a source of information for strategic planning (Fraillon, 2020). For administrators and staff alike,

computerized data management services are crucial to the success of their institutions. Above all, it is still the responsibility of the school administration to guarantee the security of the school's electronic records for future use. However, it is unclear how the administrators of the school can effectively use this information resource for strategic planning.

Acts as corporate memory for the school

According to Newsmonger (2018), electronic management of data has long been thought of as a document storage facility or the "graveyard" of information. Corporate computerized data management now serves as the corporate memory, able to influence and impact all that is done, thanks to new technology that has altered the landscape.

Teach management, management of information, and information technology are all dependent on the recognition of electronic data management as a crucial and repeatable asset, as an archive of written material, context, and knowledge. Corporate memory refers to how educational institutions improve upon best practices, avoid reinventing the wheel, and learn from their past mistakes. The researcher must address this since it is not made apparent how computerized information can be used as a corporate archive for the school in the future.

Helps to achieve the goal-setting

This highlights the idea that using electronic data management doesn't begin with data. Instead, schools can employ a variety of instruments in their school development processes, of which digital information administration is just one (Patridge, 2018). This means that the adoption of electronic data management must begin with specific objectives, frequently linked to raising the standard of instruction and learning. Goals in the classroom and at schools may be determined by what subject matter specialists believe is crucial to learning. These objectives are frequently the product of discussion, negotiation, and deliberation amongst various stakeholders; these parties may have conflicting objectives. There was a hole, nevertheless, that needed to be filled

in regarding how various stakeholders can have different objectives that could interfere with schools reaching their goal-setting.

A crucial role for school administrators is playing in the setting objectives process. The goals of many different stakeholders must be balanced with the school's culture, goal, purpose, and values, according to school administrators (Schildkamp, 2019). The policy must be interpreted by school officials in light of the specific goals they feel the institution should pursue. They have the authority to decide which objectives should come first and what data has to be acquired. For school leaders, it is imperative that goals for school development are established together and that these goals are discussed.

In addition, school administrators possess easy management over the place and manner of sense-making, in addition to carrying out and evaluating suggested growth initiatives (Mizuno & Bodek, 2020). Teachers' views and conduct, such as their involvement in goal-setting, dedication, and use of data, are greatly influenced by the attitudes and actions of school leaders. More research is necessary to fill in the knowledge gap about how these factors affect the attitudes and behaviors of instructors.

Since increased student achievement is a typical metric for evaluating academic progress, electronic data management should be implemented. Conversely, a growing emphasis on formative assessment has led to an increasing recognition of learning (Penuel and Shepard 2016). Penuel and Shepard (2016) argue that rather than concentrating just on performance on a certain sort of (standardized) examination, consideration should be given to students' ability to reason and solve problems as well as their ability to learn in broader dimensions.

Nevertheless, regardless of the concentration on learning and/or accomplishment, there is always a contradiction between using data for purposes of accountability and using

computerized data management for school development and instructional objectives. The researcher must therefore close this gap.

Electronic data management helps to improve education

To improve education and assess goals, data collection from various sources is crucial, rather than relying solely on evaluation data. Based on the previous work of Brown et al. (2017), a deliberately broad and inclusive definition of data is released, covering the following components. Officially generated digital information: This includes any relevant information that has been carefully collected on children, parents, schools, teachers, administrators, and the community surrounding the school. These electronic data may originate from both qualitative (from planned classroom observations) and quantitative (from assessment results) methods for evaluation (Suharyanto et al, 2021). To improve teaching, curriculum, and performance, a school must thoroughly analyze its current data sources. Then, it must apply and assess these changes (Alqahtani & Alammari, 2019). This is consistent with the researcher's findings since decision-making to enhance secondary school education can be grounded on statistics.

Informal electronic data: During routine instruction, teachers gather data about the requirements of their students (Rasmitadila, 2022). In an assessment-for-learning approach, this could be done, for instance, by having conversations and watching their students. As stated in the statement, "Part of regular behaviour by pupils, instructors, and peers that seek, reflects on and responds to data from dialogue, demonstration, and observations in ways that enhance ongoing learning" This is consistent with the researcher's findings because electronic data are frequently gathered rapidly in other words, "on the fly" and because they constitute a component that can be referred to as intuitive or professional judgment in data collecting.

Electronic research findings: Teachers can also utilize the most recent research to improve instruction. This is frequently referred to as "research-informed instructional practice," as

highlighted by Flood and Brown (2018), where it is defined as "the method that teachers use for accessing, evaluating, and putting into practice the outcomes of academic research to improve the way learners learn in their schools." Three different kinds of research results can be identified: professional or applied research results, which originate from practitioners conducting research within their respective schools; scientific research results from a study whereby a school did not participate; and results of scientific research from an investigation in which a school did participate (Brown 2015). The researcher agrees that educators want to use the corpus of recent research to improve instruction and raise student accomplishment.

Big electronic data: Volume, Variety, and Velocity, or the "three Vs," are what define big electronic data. Large volumes of data in a variety of formats that are constantly being added to as well as updated at a high velocity are referred to as big electronic data (Laney 2019). These electronic records can be used to forecast an organization's success in addition to tracking it. The kinds of information that stakeholders gather depend on the goals. But there's a chance that more digital data may be gathered on ideas that are simpler to quantify (McMahon & Winch, 2018).

Goal displacement may result from this, in which a company or educational institution concentrates only on the objectives regarding which they have data. Here's where there's a risk: firms might prioritize the quantifiable over other crucial objectives. There is a research gap that needs to be filled, though. For instance, future studies could concentrate on the problem of how to measure concepts that fall under the umbrella of what are sometimes called twenty-first-century goals (e.g., motivation, analytical skills, etc.), to ensure that data can be used for a variety of objectives related to raising school performance (Rozi, et al, 2022).

Electronic data management helps in schools' sense-making decisions

Following the collection of data, users need to participate in a sense-making procedure. To detect issues (such as when users are not achieving the predetermined goals) and potential reasons for these issues, electronic data must be evaluated and analyzed (Changwon, 2018). Users of electronic data must now participate in a making sense process, as the implications for problem-solving strategies and the ensuing actions derived from data analysis are frequently not obvious. To transform the information into an understanding that can be used in the improvement process, the sense-making process requires combining it with local knowledge, experience, and understanding.

Making sense of the world is not a simple or purely rational process. Decisions may never be fully dependent on data since people interpret data differently depending on their experiences and views, and intuition additionally plays a significant role in this process (Mergel, 2019). Even identical electronic data may have various interpretations for different people. Furthermore, people might also be more likely to employ short, easy solutions that don't demand as much mental work.

People may make incorrect interpretations during this sense-making process if they attempt to fit the data into a framework that supports their presumptions and beliefs without considering alternative explanations if their findings are based on a small sample size (a lack of information triangulation), or if their interpretation is heavily influenced through prior beliefs. All of these events can occur when educators attempt to figure out the sense of the official and unofficial information they have gathered to inform their decisions, according to a study done by Vanlommel as well as Schildkamp (2018). To enable the production of credible conclusions, the present research will center on data regarding leadership and decision-making in a subset of Ntungamo Municipality secondary schools.

A wide range of stakeholders with varying degrees of education are involved in this sense-making process. To formulate regulations at the system level, decision-makers need to understand different types of data. At this point, it's usually essential to make connections between the data through standard assessments (Cohen et al, 2020). Avoiding duplicate sources and focusing on readily available information and reputable sources are crucial for addressing problems at the school level. The researcher must close the involvement gap with stakeholders, even though educators and principals should understand the data that has been collected.

Principals must, however, be able to gather and interpret electronic data from various data sources to understand the contextual circumstances and respond appropriately. This is especially true if the focus is to be on student learning. As argued and asserted by Espahangizi (2020), it is important to acknowledge the variety of forms that electronic data might take. Teachers employ a range of official as well as informal electronic data at the classroom and individual student levels. Confirmation bias is still very much at play here, despite some research suggesting that teachers frequently rely more heavily on unstructured electronic data compared to formal electronic data. Given that educators utilize a range of both official and unofficial electronic data sources and interpret electronic information gathered from other data sources, this is consistent with the researcher's findings.

We must support teacher preparation colleges in addition to creating, implementing, and assessing instructional interventions for the use of electronic data (Zacher, 2019). The underutilization of data in teacher education programs historically emphasizes the need for a change to effectively use electronic data for improved student learning.

Electronic data management helps to make actions and evaluation

The above-explained sense-making process may lead to a variety of improvement actions. It might lead to changes in the curriculum and teaching strategies, for example. A school's assessment practices may also need to be modified as a result, perhaps by utilizing more

formative assessments in place of an excessive amount of summative tests. Poortman and Schildkamp's (2016) research indicates that utilizing electronic data for three primary school improvement pillars is a common approach to enhancing the quality of education. The curriculum (e.g., enhancing curricular coherence); assessment (e.g., developing and implementing (formative) assessments over the years to identify at-risk kids); and instructions (e.g. offering extra instructional help to at-risk students) are some of these pillars. The researcher concurs with the statement, arguing that a greater emphasis should be placed on formative assessments as opposed to summative exams.

It is necessary to make actual classroom and school adaptations or use instrumental data in order to use electronic data for training, assessment, and instructional activities. Although this does not always translate into concrete reform measures, the fact that electronic data are commonly used theoretically suggests that using information influences educators' and administrators' methods of thinking Farley-Ripple et al. (2018). It is possible to strategically exploit data on occasion, which means that digital information can be changed to accomplish a certain goal or personal power (Farley-Ripple et al. 2018). Since more effective use of digital information results in improved assessment and instructional strategies in schools, experts agree with the statement.

Additionally, teachers may use electronic data figuratively, indicating that they are using it regularly and symbolically to (seemingly) comply with demands and pressure from outside sources (Farley-Ripple et al., 2018). Electronic data can also be abused or misused, to sum up. When students are taught only to meet a standard or criterion, or when they are taught to the test, this is one example of such an occurrence. Symbolic electronic data consumption, misuse, and abuse are common outcomes when accountability takes precedence over development (Datnow and Park 2018). According to Schchildkamp et al. (2016), for teachers and administrators in schools to successfully carry out an action plan according to electronic data,

they need to link the electronic data as well as their day-to-day activities. The researcher agrees that both the setting in which teachers view their role and the activities they engage in daily in the classroom have undergone substantial changes.

The impact of digital information capture and records management systems on school administration and management was examined by Pelekamoyo and Silwimba (2017) at Chikola, Kabundi, Maiteneke, Sacred Heart Convent, and Sekela Secondary Schools. According to the study, the use of electronic school administration systems improves a number of areas, including process automation, knowledge management, effective communication management, record management, quality control, productivity management, performance oversight, cost-effectiveness, ease of accessibility, responsibility with improved audit trails, and greater integration of all departments and offices in schools. Particularly in secondary schools in Ntungamo Municipality, the study highlights the benefits of electronic information and documentation management systems over traditional approaches, highlighting how they can provide expandable storage, rapid access, and enhanced productivity across a range of jobs.

2.4 Relationship between data management and decision making in selected secondary schools

Administrative effectiveness

Administrative achievement, which is the result of the administrator's main strategies for fulfilling deadlines and achieving goals while adhering to school policies and procedures, is enhanced by data management. According to an investigation conducted by Tanvee and Khan (2011), administration efficacy is a multidimensional phrase that indicates how well an institutional leader can oversee the organization's daily communications, operations, and activities.

Oyedemi (2015) defines administrative effectiveness as the ability of the institution's leader to effectively link the various institutional units and ensure that information is transferred and communicated from one area to another to fulfill institutional goals. They contend that while implementing policies to achieve goals, this can be enhanced by fostering a sense of teamwork, upholding discipline, and maintaining a high standard of morale. This is consistent with the researcher's findings because data management increases administrative efficacy and motivates secondary schools to make decisions promptly.

Administrative effectiveness at work refers to how well a company meets its goals as a result of the administrator's leadership skills and the data they oversee (Lin, Jema, and Wang, 2011). It entails carrying out necessary duties following policies, using time and resources sensibly, and relying on organizations' ability to acquire and apply resources to achieve their objectives. The literature identified several indicators of administrative success, including the establishment and maintenance of institutional infrastructure, the standard of staff output, public duty, as well as the workplace environment (Giti and Suhaida, 2012). Since administration efficacy is described as the provision of appropriate infrastructure in an organizational climate that develops respect for one another, trust, teamwork, and good community engagement, this is compatible with the researcher's findings.

Since education is viewed as the most effective means of lowering poverty and inequality, enhancing health, facilitating the use of technology, and creating and disseminating knowledge, effective leadership in educational institutions is crucial (Chen et al., 2020). Nigeria's educational philosophy also aims to give students the skills and information they need to become self-sufficient and make a substantial contribution to the country's sociocultural, political, and economic growth (National Policy on Education NPE, 2013). Educational institutions must therefore use data in a way that guarantees students will get the values, work habits, knowledge, and skills necessary to make a substantial contribution to society. This is in

line with the researcher's findings because when educational institutions are run using data management, students get the knowledge, routines, attitudes, and abilities needed to make a constructive contribution to society both now and in the future.

There is no doubting the importance of information handling. This is because data management in educational institutions acts as a knowledge base that the community at large, PTA members, and school ministries can use to review information and happenings (Kojima, 2018). Any social organization, including an educational institution, can benefit from keeping school data since it provides useful information on people management and employees. More precisely, the importance of school handling of information is best summed up by the following categories.

The 21st century is seen as the information era, a trustworthy source of information. To plan financially and assess the structure and design of educational institutions, the government requires data concerning the educational system. Schools gain from effective data management, as stated by Pedro et al. (2019) since it provides them with relevant data and evidence that educators, administrators, and other educational stakeholders can use as needed. This is in line with the researcher's conclusions since data management offers accurate and trustworthy information regarding instructional activities.

Information control: With data management, instructors and students can exercise authority over information related to the everyday activities of the educational institution, including its distribution, use, retention, storage, and retrieval (Curry et al., 2019). Thus, school events and activities can be documented using educational data. Crucial Personal Data for Workers and Students: Despite their similarities, the terms knowledge and knowledge have different meanings (Prainsack, 2019). Data must be processed before they can be utilized to create information. Since the equipment used for processing gets data in the form of raw materials and outputs useful information, this is consistent with the researcher's conclusions.

Educational planners can project the future with the help of data management (Chiware, & Becker, 2018). An educational, economical, or political plan constructed on erroneous data or facts is like a structure built on a substandard foundation. Therefore, to allow school administrators at all levels to be successful, it is their responsibility to provide the right foundation upon which to build their plans.

Planning entails making future predictions and choosing the best course of action while and it necessitates having the necessary knowledge at hand (Stromquist, 2022). However, given the challenges in locating accurate and up-to-date data, it appears that inadequate and incorrect data are the scourge of education planning in Nigeria at the regional, state, and federal levels. This is consistent with the researcher's results since planners in education can anticipate future demands to enhance secondary schools using the use of management of data.

Details about important school incidents: The head teacher is expected to keep specific documents that include, among other things, information on the routine school activities in his or her role as coordinator and administrator. A few conditions must be met for the information to be useful. False claims and exaggeration must be avoided, but they and data must be accurate, full, and easily accessible (Bright & Asare, 2019). This is consistent with the results obtained by the investigator since head teachers are obligated to keep some records that offer, at minimum, some information about the day-to-day activities of the school in their function as organizers and administrators.

When it comes to school staff and students, there ought to be a trustworthy resource to refer to. Dawson (2019) asserts that the availability of vital information and the easy availability of data relevant to schools and the educational sector depends on effective data management. This illustrates the negative effects of losing data. School statistics contain information on school

history. Koutsianou & Emvalotis (2021) claim that data helps secondary schools comprehend their requirements, problems, and performance in addition to their past, present, and prospective goals. The researcher agrees with Kempner's claim, realizing that school administration is accountable for keeping accurate records and paperwork that can be used as evidence in court.

Promoting good school governance

All around the world, governments are either praised for their capable leadership or criticized for their incompetent administration (Tezel et al., 2020). While there are many factors to consider when complimenting a college or university for its outstanding governance, data accessibility, and effective management rank among the most crucial.

According to Sebina (2014), the implementation of effective data management systems and the government's acceptance of laws about freedom of information are prerequisites for good governance. Transparency is one of the eight (8) main qualities of good government. Their endorsement indicates that sufficient information is offered in easily understood forms and media, and transparency implies that data is freely available to individuals who will be impacted by such decisions. This is consistent with the researcher's claim that data management allows the government to function openly and answer to the people who elected it.

It is only possible to achieve good governance when data management is deemed operational or relevant. Stated differently, the existence of good governance necessitates the right to information and the empowerment of citizens to engage in significant ways in the process of making decisions. Effective data management initiatives must be implemented and followed through on for sound governance to continue. Since information reflects and records the actions and procedures of the government, it is essential to good governance. Pedro et al. (2019) assert that an integral component of successful governance is transparent governance. This is

consistent with the researcher's findings because an open exchange of information is necessary for this to occur.

According to Chiware and Becker (2018), data management and information storage in educational institutions have grown increasingly crucial in recent years, not only for historical reasons but also, and maybe more importantly for the development of management and policy, both now and in the future. The handling of data is being utilized as a foundation for advancement as well as a method and instrument for understanding businesses. Goldberg (2019) goes on to say that it has always been vital to examine the goals, roles, policies, procedures, and practices when evaluating the performance of every employee in the school. The creation of organizational manuals, rules, and procedures that direct personnel toward best practices and methods of operation would be the overall result of these studies. This is in line with the researcher who stated that the outcomes are to be underpinned by managed data that is properly stored and with the potential of being retrieved easily.

Data, as reported by Pedro et al. (2019), was able to record an institution's beginnings, development, and current state as well as demonstrate how it meets the needs and benefits of its constituents. Data is frequently consulted by efficient officials for program planning, analysis, and monitoring. This is consistent with the researcher's finding that well-managed data gives decision-makers the accurate information they need.

Supporting democratic accountability

According to Smith and Benavot (2019), accountability is the process by which an individual or group of individuals must report their actions along with whether they have fulfilled or failed to fulfill their obligations. Since one cannot be held accountable to anyone unless they have responsibility for something, accountability and responsibility go hand in hand. Accountability can be attained through responding to challenges, complying with internal and external

regulations, and meeting auditing requirements. This is accurate for the researcher, as managed data is essential to fostering school accountability.

Consistent with the previously indicated viewpoints, Ayling & Chapman (2021) maintain that for the tool to be beneficial, users must have access to data and information that allows them to independently assess the extent of the educational institution's responsibility to the stakeholders. Accountability and openness in democratic governance are largely dependent on the public's ability to obtain information that enables them to evaluate an institution's level of transparency.

Supporting continuing service delivery

Sule (2020) asserts that access to and availability of controlled data are critical to the overall effectiveness and productivity of school management across the spectrum of school functions. For instance, without properly maintained data, development initiatives are frequently challenging to launch and maintain. Data management records previous choices, rules, and options, suggesting that delays in decision-making that impact service delivery at educational institutions can be avoided when data is easily accessible and readily available. Development efforts must lose effectiveness in the absence of sufficient data. The researcher acknowledges that insufficient information systems impede program implementation at the school and that there exists no way to confirm that monies allocated for the school's development are used as intended.

2.5 Research gap

According to the studies conducted by Pelekamoyo and Silimbwa (2017), Poortman and Schildkamp (2016), Vanlommel and Schildkamp (2018), Brown et al. (2017), and other experts have also carried out a great deal of research on data management. On the other hand, no research has focused on data management and decision-making. To close this research gap, a researcher investigating the Ntungamo Municipality needs to collect data that will help planners

for education and policymakers make well-informed decisions on data management. As a result, the researcher has decided to conduct research and a study at several secondary schools inside the Ntungamo Municipality.

CHAPTER THREE
METHODOLOGY

3.0 Introduction

The research design, study population, sample size, sampling strategies, data collection procedures, data analysis, ethical issues, and data gathering methodologies are all covered in this chapter.

3.1 Research Design

The research design used was cross-sectional. Data from a wide range of people are gathered at one time via a cross-sectional research approach (Wade & Tavris, 2015). With the use of this research design, the researcher was able to gather information on data-driven leadership and making choices in a limited number of secondary schools in the Ntungamo Municipality at one particular period. A mixed method approach was used to collect data on the topic under investigation. By combining quantitative and qualitative methodologies, this strategy produced a more thorough grasp of the research scenario. This approach was especially appropriate for the Data Management and Decision Making in Selected Secondary Schools in Ntungamo District because it allowed the researcher to record statistical information about the collection, storage, and use of data in addition to the real-world experiences and perspectives of teachers and school head teachers. Quantitative data included frequencies and percentages, while qualitative data offers deeper insights into attitudes and perceptions regarding data-driven decision-making.

3.2 Study population

According to the Education Department Ntungamo Municipality report (2022), 5721 students were enrolled in the four secondary schools that were chosen for the study: Ntungamo High School (1732 students), Brainstorm High School (1039 students), Ntungamo Community Secondary School (2213 students), and Ntungamo Progressive High School (744 students).

Following the schools' alphabetical sequence for the study, the researcher looked at the first four even numbers among all of the divisions within Ntungamo Municipality. Since most of the data utilized in the study came from student data that teachers and head teachers used to advance the school, the study's target population consisted of 1400 individuals from the four secondary schools that were chosen. This group included candidate students, teachers, and head teachers.

3.3 Sample Size

A sample, according to Kothari (2014), is a small number chosen by a researcher from a big group. Thus, the portion of the universe to be examined is referred to by him as a sample. The researcher used the formula developed by Yamen (1967). where N- is the population size, e- sampling error, and Yamen's sample size.

$$n = \frac{N}{1 + N(e)2}$$

$$n = \frac{1400}{1 + 1400*(0.05)^2}$$

$$n = 311$$

Table 1: Sample size distribution

Category of respondents	**Target Population**	**Sample size**	**Sampling techniques**
Head teachers	04	04	Purposive sampling
Teachers	128	28	Simple random sampling
Candidate students	1268	279	Simple random sampling
Total	**1400**	**311**	

3.4 Sampling techniques

Purposive sampling methods and basic random sampling were employed in this investigation.

3.4.1 Purposive sampling techniques

According to Kotler (2013), a purposive sample is a non-probability sample that is chosen based on the characteristics of a community and the goal of the study. Due to their background

in interacting with kids, instructors and head teachers were chosen for the purposive sample technique. This allowed them to collect data for the school's management and give the researchers the information they needed.

3.4.2 Simple random sampling techniques

To classify respondents from the various secondary schools that were chosen for the study, cluster sampling was one of the straightforward random procedures that were employed. The respondents were categorized using stratified sampling according to attributes like age, gender, and educational attainment. The students of the survey respondents were chosen using simple random sampling as the students provided the majority of the data for the study and the school handled its data. In this study, only individuals who gave their consent were counted. This was done to lessen sample bias when gathering data.

3. 5 Data Collection Methods

The investigator utilized a combination of both qualitative and quantitative information collection techniques, such as surveys and in-depth interviews.

3.5.1 Interview

According to Smith (2012), an interview is a face-to-face discussion held between the person conducting the interview and the respondents to fully grasp each respondent's viewpoint on the topic under investigation. To gather data for the study, the researcher performed in-depth in-person interviews with teachers as well as head teachers. This strategy gets extensive information quickly and reduces bias because respondents can ask follow-up questions.

3.5.2. Questionnaire

According to Kothari (2004), a questionnaire is a structured list of questions created to achieve the study's goals. The subject respondent was given prearranged and premeditated questions. To gather information from the respondents, particularly the students the researcher employed a

self-administered, closed-ended questionnaire. This approach proved effective in gathering data from a sizable group quickly.

3.6 Data collection instruments

Instruments for gathering data from computer-assisted interviewing systems or questionnaires are referred to as data collection instruments (Canals, 2017).

3.6.1 Survey

To collect information from the respondents, the researcher employed structured questionnaires/surveys. A structured survey is a written form that asks respondents a series of standardized questions in a predetermined order and with a specific language that is specified (Saris & Gallhofer, 2014). Students in the chosen secondary schools were given standardized questionnaires with closed-ended questions on them. Because the questionnaires gathered data from a sizable sample, they were utilized as instruments.

3.6.2 Interview guide

According to Schensul and LeCompte (2013), a guide to interviews is just a summary of the important subjects and questions that need to be covered during the interview. The researcher used the interview guide because it made it easier to determine how manual and electronic data management affected secondary school decision-making, as well as how data management and head teacher decision-making related to each other in a few chosen secondary schools.

3.7 Data quality control

3.7.1 Reliability

The questionnaire, which was the instrument most frequently used by a group of participants from other surrounding schools who did not engage in the study, was one of the tools that the researcher pre-tested. Having trustworthy instruments for the investigation was beneficial to the researcher.

3.7.2 Validity

The amount of accuracy to which the test's sample of items accurately reflects the material it is intended to assess is known as validity. Validity is a measure of the quality of your research. A group of specialists who conducted a review were given the study instruments by the investigator. The subject matter validity index was then computed. According to Amin (2005), an instrument must have an overall average index of 0.70 or higher to be deemed genuine. With a validity level of 0.8, the researcher was deemed qualified to gather data using the calculation for the content validity index, which is shown below.

$$CVI = \frac{\text{Number of relevant items}}{\text{Number of experts}}$$

3.8 Data collection procedures

All research-related assignments that must be finished in order to fulfill the objectives of the study and offer some possible solutions to the problem under investigation are included in this section of the thesis or dissertation (Daniel, 2013). The researcher requested an introduction letter from the dean of the Department of Research Post Graduates at Bishop Barham University College in order to begin a study. Respondents who were contacted throughout the data collection process received a copy of this letter. In order to gather information for the data analysis and conclusions presentation, the researcher additionally interviewed respondents and distributed questionnaires to the selected respondents.

3.9 Data analysis

Once the research site's questionnaires were collected, they were sifted to determine if the answers were accurate. Only accurately completed questionnaires were taken into account for analysis. Sorting, examining, and categorizing the data in preparation for analysis are all part of data analysis (Babbie, 2011). After being gathered, data must be processed and examined before being presented. Using SPSS and coding, the researcher examined the quantitative data

that had been gathered. WORDS were used to examine qualitative data. All of the interview information was gathered, entered into paper following the predetermined goals, and then verbally interpreted and examined. This indicates that rather than being expressed in numerical words and figures, the data was described and then coded to identify similarities and contrasts.

3.10 Inclusion and Exclusion Criteria

To guarantee the accuracy and usefulness of the data gathered, the study on Data Management and Decision Making in Selected Secondary Schools in Ntungamo District used particular inclusion and exclusion criteria. Head teachers, instructors, and prospective students who actively participated in administrative decision-making and data management were included in the inclusion criteria. Additionally, schools that had implemented formal data management systems or record-keeping practices in the last three years were considered eligible. Conversely, the exclusion criteria ruled out primary schools, newly established secondary schools (less than one year old), and staff members with no role in data collection, analysis, or administrative decision-making. Schools outside Ntungamo District or those with incomplete administrative structures were also excluded to maintain focus on the study's scope.

3.11 Ethical considerations

By promising to keep the information they provided confidential, not share it with outside parties, and use it only for academic purposes, the researcher obtained permission from the study population's responses. After receiving the children's consent, the researcher noted that they voluntarily agreed to take part in the research depending on their developmental potential, as shown in the appendices. Since the study involved children, the researcher kept the parents and guardians informed and involved.

3.12 Limitations of the study

The researcher was under pressure and stressed out as a result of insufficient funding. To produce a completed report, the researcher ensured, however, that she utilized only the resources available to her during the investigation.

The rigidity of those who refused to react to the questions posed. This resulted from the respondents' perspectives on the subject. The responders were informed by the researcher of the study's objective and were informed that the data provided was only being used for academic research to gather pertinent information.

There was a delay in delivering the completed questionnaires. This was a result of the majority of respondents' busy schedules in schools, including head teachers and teachers. Nonetheless, the material was provided to the researcher on time, and she told the respondents about the goal of the study.

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS

4.1 Introduction

The study's goals were to determine how manual data management affects secondary school decision-making, look into how electronic data management affects secondary school decision-making, and investigate the relationship between data management and choice-making in a few chosen secondary schools a relationship that is covered thoroughly in this chapter.

4.2 Response rate

The questionnaire and interview answers were used to write the report once the data for the study was analyzed.

Table 1: Response rate

Questionnaire administered	**Survey respondents**	**Response rate (%)**
Intended questionnaires	247	100
Collected questionnaires	209	85
Interviews		
Head teachers	04	100

Source: Primary data, 2023

Morton et al. (2012) state that a survey with a rate of response of fifty percent or more is deemed sufficient for reporting. 247 questionnaires were issued by the researcher, and 209 of them were returned by respondents with all the necessary data. Because of this, the study's 85% response rate provided enough data on which to establish its recommendations and conclusions. The interviews were done to the intended respondents and both of them responded giving a response rate of 100%.

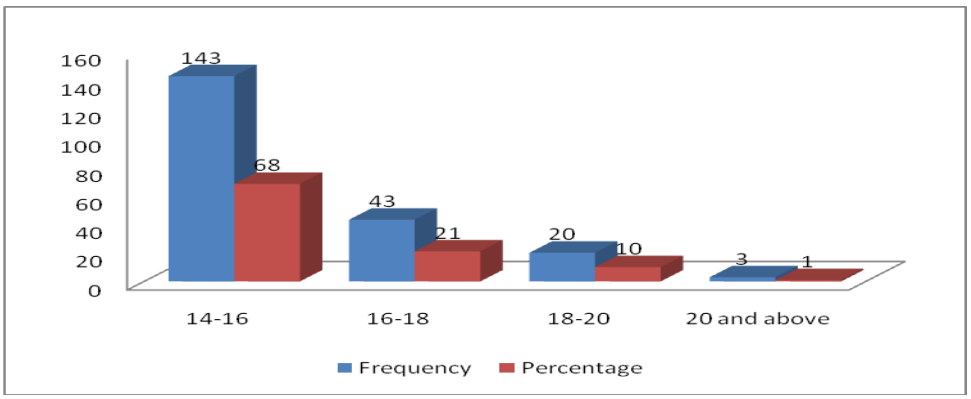
4.3 Demographic characteristics of respondents

This section displays the demographics of the study participants, particularly their gender, age, and educational attainment.

4.3.2 Age of the respondents

In order to get data on the respondents' comprehension levels depending on the variations in their age groups, the researcher took note of the respondents' ages. The information is shown in Figure 1 below.

Figure 1: Age of the respondents



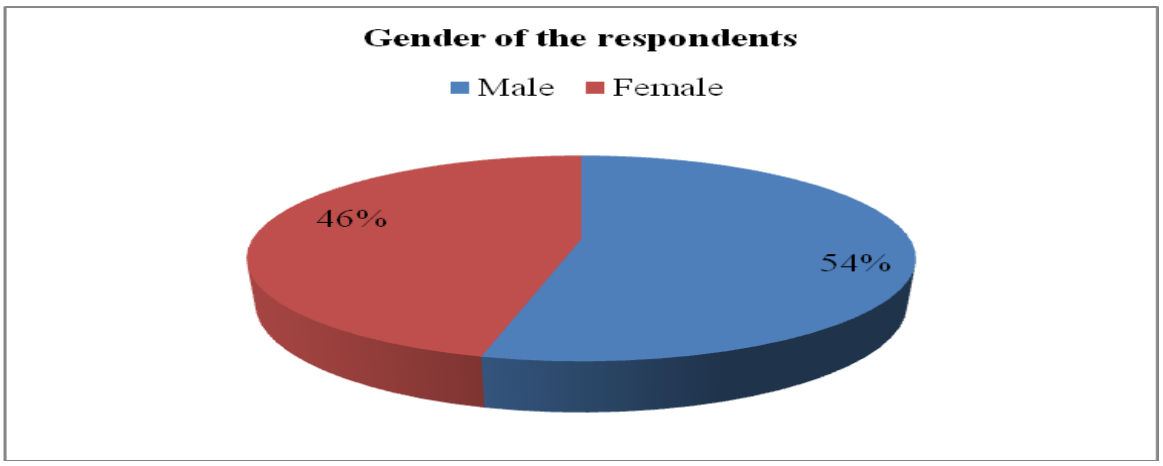
Source: Primary data, 2023

According to the calculated results about the respondents' ages, the bulk of those surveyed were between the ages of 14 and 16 (14%) and 13% were 20 years of age or more. more information regarding the respondents' ages.

4.3.1 Gender of Respondents

To guarantee that there was a balance of males and females throughout the study, the researcher noted the genders of the respondents, as shown in Figure 2 below. The results are shown in Figure 2.

Figure 2: Gender of the respondents



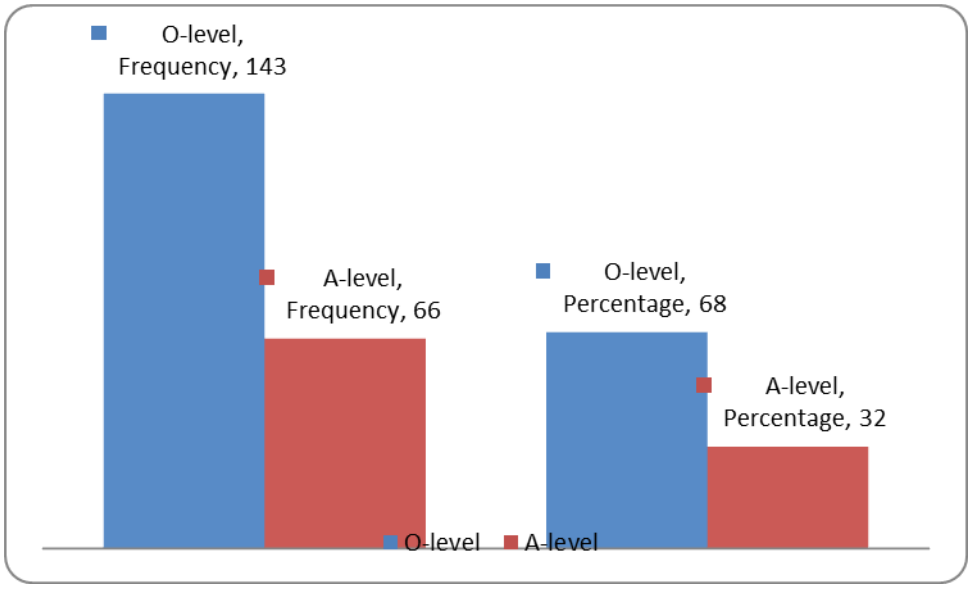
Source: Primary data, 2023

The study's findings, which are displayed in Figure 3 above, indicate that males made up the largest proportion of participants 54 percent followed by females 46 percent. To collect information from both male and female respondents, the researcher considered the gender of each individual.

4.3.3 Education level of the respondents

The educational background of the respondents was noted by the researcher, and the information is displayed in Figure 3 below.

Figure 3: Education level of the respondents



Source: Primary data, 2023

The results of the survey about the educational backgrounds of the respondents showed that 66% of them were in O-level, while 32% were in A-level. The researcher considered the educational backgrounds of the respondents to collect data based on the respondents' literacy levels.

4.4.1 Descriptive analysis of the effect of manual data management on decision-making in secondary schools of Ntungamo Municipality

Table 2 below displays the results of the investigator's descriptive analysis of how manual data management affects making choices in secondary schools in the Ntungamo Municipality.

Table 2: Descriptive statistics on the effect of manual data management on decision-making in secondary schools of Ntungamo Municipality

Statements	N	Minimum	Maximum	Mean	Std. Deviation
In terms of higher student accomplishment, manual data management in schools contributes to ongoing school improvement.	209	3	4	3.42	.495
Manual data is used for accountability purposes	209	3	4	3.40	.490
In order to demonstrate if the steps made by educators and administrators have improved student learning and accomplishment and changed teachers' classroom practices, manual data collection is crucial.	209	2	4	3.09	.727
Aids in the development of schools by enabling educators and administrators to use data to assess how the institution and its stakeholders	209	2	4	3.13	.714
Assessment information sheds light on how various student groups are learning and serves as a foundation for modifications to student learning policies.	209	2	4	3.31	.462
Manual data are crucial for tracking the success of interventions and providing justification for the decisions made by educators and administrators.	209	1	4	3.22	.415
Valid N (listwise)	209				

Note. 5 = strongly agree, 4 = Agree, 3 = Not sure, 2 = Disagree, 1 = Strongly Disagree.

According to the field survey results in (Table 2) above, the majority of those who participated in Ntungamo Municipality believed that traditional data management within educational institutions contributes to ongoing school development as a whole (Mean = 3.42 and SD = 0.495).

Furthermore, based on their findings (Mean = 3.40 and SD = 0.490), the respondents concurred that manual data management is utilized for accountability reasons.

The majority of respondents agreed that the results on manual data use are crucial in demonstrating whether the actions undertaken by teachers and administrators in schools have improved pupil achievement and learning and changed teachers' classroom practices (Mean = 3.09, SD = 0.727).

The majority of respondents to the study survey agreed with the findings on manual data assistance in school development, which is attained when educators and school administrators use data to assess how the school and stakeholders are doing (Mean = 3.13, SD = 0.714). When asked if assessment data offers insight into the learning of various student groups and serves as a foundation for policy changes about student studying, the majority agreed (Mean = 3.31, SD =.462).

The majority of respondents thought that the results of the research on manual data are crucial for tracking the efficacy of interventions and providing justification for the measures taken by educators and school administrators (Mean = 3.22, SD =.415).

4.4.2 Correlation results on the effect of manual data management on decision-making in secondary schools of Ntungamo Municipality

Table 3: Shows correlation results for the effect of manual data management on decision-making in secondary schools of Ntungamo Municipality

Correlations

			Manual data management	Decision making
Spearman's Rho	Manual data management	Correlation Coefficient	1	.342
		Sig. (2-tailed)		.003
		N	209	209
	Decision-making	Correlation Coefficient	.342	1
		Sig. (2-tailed)		.003
		N	209	209

**. Correlation is significant at the 0.01 level (2-tailed).

According to Table 3 above, the predicted significance ($p=0.003<0.05$, $r=0.342$) indicates a linear link between traditional data management and decision-making in secondary educational institutions in the Ntungamo district. We accept the alternative hypothesis and reject the null hypothesis.

4.4.3 Regression Results on the effect of manual data Management on Decision-making in Secondary Schools

The impact of traditional data management on decision-making in Ntungamo Municipality secondary schools was examined using regression analysis. The computed details are listed below.

Table 4: Shows regression results for the effect of manual data management on decision-making in secondary schools

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.342[a]	.117	.109	.90398

a. Predictors: (Constant), manual data management

The predictor; manual data management yielded the following results: R =.342, R squared =.117, adjusted R square =.109, with standard error of the final estimate =.90398. The R^2 value of.104 indicates that manual handling of information contributed 10.9% of the variance when making decisions in secondary schools in Ntungamo Municipality, with the remaining 89.1% likely attributable to other unstudied causes.

4.5.1 Descriptive analysis for the effect of electronic data management on the decision-making of secondary schools in Ntungamo Municipality

Table 5 below displays the results of the researcher's analysis of how electronic data management affects secondary school decision-making.

Table 5: Descriptive statistics for the effect of electronic data management on the decision-making of secondary schools

Statements	N	Minimum	Maximum	Mean	Std. Deviation
Electronic data management helps administrators require information to base on for decision-making to carry out their official duties and responsibilities efficiently and effectively in a transparent manner	209	0	4	2.32	1.057
Electronic data management also acts as raw materials for research in various disciplines in the schools to facilitate the development	209	1	4	2.49	.944
Electronic data management has long been seen as the graveyard of information to base on for the smooth running of the school	209	0	4	3.16	.757
Electronic data management helps to make actions and evaluations in the school because the outcomes of the sense-making process from data can lead to different types of improvement in the school	209	0	4	3.10	.791
Valid N (listwise)	209				

Note. 5 = strongly agree, 4 = Agree, 3 = Not sure, 2 = Disagree, 1 = Strongly Disagree.

According to the survey results in (Table 5) above, the majority of those who participated in Ntungamo Municipality did not believe that electronic data management assists administrators in meeting their official obligations and duties in an effective, transparent, and efficient manner according to a (Mean = 2.32 and SD = 1.057).

The respondents were unsure about the idea that electronic management of information also serves as a source of raw materials for research across a range of subject areas at educational institutions, hence promoting development (Mean = 2.49 and SD = 0.944).

The bulk of respondents (Mean = 3.16, SD = 0.757) agreed that the results on electronic management of data have long been regarded as the repository of data to rely on for the efficient operation of the institution.

The results of how to derive meaning from data can lead to many sorts of enhancements in the school, which the majority of respondents to the study survey on computerized data management still support (Mean = 3.10, SD = 0.791). This helps with decisions and assessments in the school.

4.5.2 Correlation results on the effect of electronic data management on the decision-making of secondary schools

Table 6: Shows correlation results for the effect of electronic data management on the decision-making of secondary schools

Correlations

			Electronic data management	Decision making
Spearman's rho	Electronic data management	Correlation Coefficient	1	.472**
		Sig. (2-tailed)	.	.003
		N	209	209
	Decision-making	Correlation Coefficient	.472**	1
		Sig. (2-tailed)	.003	.
		N	209	209

**. Correlation is significant at the 0.01 level (2-tailed).

Electronic data management has long been viewed as the repository of information needed to run a school smoothly. Following (Table 6) above, the study found a significant positive relationship between electronic data management and secondary school decision-making at (0.472) in Ntungamo Municipality. This indicates that electronic data management additionally

functions as the foundation for studies involving various disciplines in educational institutions to facilitate development.

4.5.3 Regression results on the effect of electronic data management on the decision-making of Secondary schools

Regression modeling was used to see if electronic data management affected secondary schools in Ntungamo Municipality's decision-making process. The computed details are listed below.

Table 7: Shows regression results for the effect of electronic data management on the decision-making of secondary schools

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.472[a]	.183	.171	.86961

a. Predictors: (Constant), electronic data management

The results show that using electronic data management as the predictor, R is 427, R^2 is 1873, the adjusted R square is 171, and the standard error of the prediction is 86961. The R^2 value of.183 indicates that there was an 18.3% variation in the impact of electronic data management on decision-making in Ntungamo Municipality, with other factors not included in the study accounting for the remaining 81.7%. Lastly, the results of correlation and regression analysis point to a strong favourable influence of electronic data management on secondary school decision-making.

4.6.1 Correlation results on the relationship between data management and decision-making in selected secondary schools of Ntungamo Municipality

Table 8: Shows correlation results for the relationship between data management and decision-making in selected secondary schools

Correlations

			Data management	Decision making
Spearman's rho	Data management	Correlation Coefficient	1.000	.530**
		Sig. (2-tailed)	.	.000
		N	209	209
	Decision making	Correlation Coefficient	.530**	1.000
		Sig. (2-tailed)	.000	.
		N	209	209

**. Correlation is significant at the 0.01 level (2-tailed).

Based on the information presented in Table 8, the study discovered a significant positive relationship ($p = < 0.01$, $r = 0.530$) between data management as well as decision-making in a subset of secondary schools in the Ntungamo Municipality. This suggests that data management supports effective interaction and transfer of information among institutional units, helps teachers and students exercise control over the distribution, use, retention, storage, as well as retrieval of information related to school operations, and helps school leaders link these units together.

4.6.2 Regression results on the relationship between data management and Decision-making in selected Secondary schools

Table 9: Shows regression results for the relationship between data management and decision-making in selected secondary schools

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.530	.282	.270	.86105

a. Predictors: (Constant), data management

The predictor, data management, produced the following results: R =.530, R^2 =.282, adjusted R square =.270, and standard deviation of the estimate =.86105. The R^2 value of.282 indicates that data management affected decision-making in Ntungamo Municipality with a 28.2% variance, with the remaining 71.8% being attributable to other unstudied factors. Finally, it was discovered that data management significantly improved secondary school decision-making. It could be suggested that data management throughout the educational system serves as an information bank where stakeholders may examine data and events of the school.

According to respondent 05:

> *"Our school managers and instructors may approach data collecting and analysis hands-on thanks to manual data management. This may result in decision-making that is more individualized and catered to the unique requirements of the staff, students, and school. Teachers can access and evaluate data quickly with manual data management, which helps them make prompt judgments. This is particularly helpful in locating and resolving problems that need to be addressed right now, such as behavioural difficulties or poor school performance*.

Respondent 13 noted that:

> *"Managing data manually can lead to a deeper understanding of the data itself. Educators who are actively involved in data collection and organization are more likely to have an in-depth knowledge of their student's progress and challenges. Schools can customize their data management systems to suit their unique requirements."*

The results of the study's interviews with respondents regarding how electronic data management affects secondary schools' decision-making reveal that these systems facilitate more efficient data entry, gathering, storing, and analysis. It was discovered that doing this lowers the possibility of human mistakes that can arise when managing data manually, producing information for decision-making that is more accurate and trustworthy. Real-time data access is made possible by electronic systems for parents, teachers, and administrators. It was mentioned that having instant access to current information enables more rapid decision-making and prompt intervention when necessary. Administrators and educators can gain a better understanding of intricate data patterns with the use of visualization tools provided by many computerized data management systems. Data-driven decision-making and trend identification are facilitated by visual aids like charts, graphs, and dashboards, while electronic data systems enable data exchange and cooperation between administrators and teachers. This can promote a cooperative attitude to problem-solving and improve the group's awareness of the requirements of the students.

Another respondent mentioned:

> *"Since insufficient security measures might result in serious dangers and possible legal repercussions, my school prioritized ensuring data security and privacy to avoid unauthorized access and breaches. While over-reliance on electronic systems might make one vulnerable to technical problems, blackouts, or system breakdowns, it can also cause problems for decision-making processes if the technology is unavailable."*

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0 Introduction

According to the order determined by the study's goals, the results are discussed in this chapter.

5.1 Effect of Manual Data Management on Decision-making in Secondary Schools of Ntungamo Municipality

The results of a field survey conducted in Ntungamo Municipality reveal that most respondents felt that mechanical handling of information in schools contributes to ongoing school improvement with a mean score of 3.42 and a standard deviation of 0.495. This is consistent with the findings of Oweis (2018), who emphasized that the primary goal of manual management of data in educational institutions is to facilitate ongoing school improvement through higher student accomplishment.

Furthermore, a level of agreement (Mean = 3.40 and SD = 0.490) in line with Palmaccio, et al. (2022) who claimed that manual data is utilized for accountability purposes referring to schools' use of data to generate proof for instructional and educational effectiveness the respondents also concurred that manual data management can be used for accountability purposes. To communicate with students, teachers, parents, as well as educational inspectorates, schools might use manual data, including assessment as well as final test results, classroom observations, and teacher performance evaluation findings.

The majority of respondents agreed that the results on manual data use are crucial in demonstrating whether the actions taken by educators and school administrators have improved the performance of students and changed teachers' classroom practices (Mean = 3.09, SD = 0.727). This is consistent with the findings of Rissanen et al. (2019), who noted that the use of data manually is crucial in

generating evidence regarding the efficacy of measures made by educators and administrators to modify teaching practices and enhance student learning and accomplishment.

In the study survey, the majority of respondents agreed (Mean = 3.13, SD = 0.714) that manual data aids in school development when teachers and school administrators use data to assess how the institution and its stakeholders operate. Similarly, when asked if assessment data offers insight into the learning of various student groups and serves as a foundation for policy changes in student learning, the vast majority agreed (Mean = 3.31, SD =.462). This is consistent with Reynolds, et al. (2021), who emphasized that data from assessment manuals can offer significant insight into how various student groups are learning and serve as a foundation for modifications to policies about student learning and achievement, testing, instructional schedules, and student grouping.

The majority of respondents thought that the study's findings on handwritten data are crucial for tracking the efficacy of interventions and providing justification for the measures taken by educators and school administrators (Mean = 3.22, SD =.415). This is in line with the findings of (Schildkamp, 2019), who claimed that manual data are crucial for tracking the success of interventions and determining whether decisions made by school administrators and teachers such as creating new lesson plans tailored to the needs of particular student groups or implementing effective professional development programs have a positive impact on the improvement of the school concerning changes in student outcomes.

5.2 Effect of electronic data management on decision making of secondary schools in Ntungamo Municipality

To fulfill their official obligations and duties effectively, efficiently, and transparently, administrators in Ntungamo Municipality needed information to base their decisions on. However, the majority of respondents were unsure of this (Mean = 2.32 and SD = 1.057). This is consistent with Schildkamp's (2018) finding that all of these outcomes are possible when educators attempt to interpret both the official and informal information they have gathered to inform their decisions.

According to Longhurst et al. (2020), electronic data also serve as raw materials for studies across different fields, including studies on science, which is a crucial component of school development. However, the respondents were unsure if this was also the case. The mean score for the respondents was 2.49, the standard deviation was 0.944. Electronic data can also be utilized as a resource for information in the school's strategic planning process.

The bulk of respondents (Mean = 3.16, SD = 0.757) agreed that findings on electronic storage and management have been widely accepted as the repository of data to rely on for the efficient operation of the institution. This is consistent with the argument made by Ensmenger (2018) that electronic management of data has long been thought of as a document storage facility or the "graveyard of information." Corporate computerized information management has become now the corporate memory, able to inform and influence all that is done, thanks to new technology that has altered the landscape.

The results of the sense-making process from data can lead to many sorts of improvement in the school, which the majority of respondents to the study survey on electronic data management still agree with (Mean = 3.10, SD = 0.791). This helps with decisions and evaluations in the school. This is consistent with the findings of Poortman and Schildkamp (2016), who emphasized that the results of the process of making sense of electronic data can lead to various improvement actions. For instance, it can result in modifications to the curriculum and instruction, as well as changes to the assessment practices used in a school, such as the use of more formative assessments rather than an excessive amount of summative assessments.

5.3 Relationship between data management and decision-making in selected secondary schools of Ntungamo Municipality

According to Curry et al. (2019), data management helps teachers and students relinquish control over the distribution, utilization, retention, storage, and retrieval of information that concerns the operation of the school. The study also found a significant positive relationship between data

management and choice-making in the chosen secondary schools ($p = 0.0<0.051$, and $r= 0.530$) of Ntungamo Municipality. These findings suggest that data management supports effective communication and transmission of information among school leaders and facilitates the flow of information throughout the school.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

Based on the study's goals, this chapter covers a summary of findings, conclusions, and recommendations.

6.1 Summary of Findings

6.1.1 Effect of manual data management on decision-making in secondary schools

The study's conclusions about the effects of manually operated data management on secondary educational making choices were as follows: manual handling of information in schools helps achieve continuous enhancement of schools in terms of increased achievement for students; manual data is used for responsibility objectives; the use of manual information is essential in generating evidence about the efficacy of actions taken by teachers and administrators to alter classroom practices and improve student comprehension and achievement; and it supports the growth of schools, which is realized when teachers and administrators use information to ascertain how the school. Changes in policy on student learning are based on assessment data, which provides insight into how different student groups are learning. To monitor the effectiveness of programs and provide evidence for the choices made by educators as well as school officials, manual data is essential.

6.1.2 Effect of electronic data management on decision making of secondary schools

The study found that secondary school decision-making is significantly impacted by computerized data management. In particular, it gives administrators the data they require to effectively and openly fulfill their official obligations and responsibilities. Furthermore, computerized data management facilitates development by providing a source of foundational information for study across multiple disciplines within the school. Even though electronic data management is known for

being an archive for information, it helps the school take action and evaluate itself because decisions based on data can lead to several improvements.

6.1.3 Relationship between data management and decision making in selected secondary schools

The study found a significant positive link ($p = < 0.01$, $r = .530$) between data management and decision-making in a selection of secondary schools in the Ntungamo Municipality, based on the information shown in Table 8. This suggests that knowledge management helps pupils and educators exercise authority over the transmission, use, preservation, safeguarding, and retrieval of knowledge associated with school operations and that it assists school administrators in ensuring efficient operations. It also supports efficient communication and transfer of knowledge among institutional units.

6.2 Conclusion

6.2.1 Effect of manual data management on decision making in secondary schools

A hands-on approach made possible by manual data management helps instructors comprehend data at a deeper level. In the event of a problem, it facilitates prompt resolution and tailored decision-making. The freedom to modify data collection techniques to the particular requirements and values of the school is another benefit of this approach. The shortcomings of manual data handling are increasingly obvious. For many of these issues, switching to electronic systems for managing data provides answers. To enable schools to make decisions that will benefit students and the learning environment as a whole, these systems can offer effectiveness, precision, actual time access, integration of data, visualization features, and long-term analysis capabilities.

6.2.2 Effect of electronic data management on decision making of secondary schools

Electronic systems for managing data have made it possible for schools to operate with unprecedented accuracy and efficiency. When administrators and educators have instant access to up-to-date information, they may take prompt, decisive action. Through the conversion of complex

data sets into easily understandable visual representations, visualization technologies assist in the identification of patterns and development that direct strategic activities. Furthermore, gathering data over an extended period of time makes it easier to spot long-term patterns, advantages, and places in need of development. This forward-thinking method encourages strategic planning and enables educational institutions to modify their policies and curricula to meet the changing needs of their students.

6.2.3 Relationship between Data Management and Decision-Making in Selected Secondary Schools

The results of the study showed that in a subset of secondary schools in Ntungamo Municipality, there is a substantial positive link ($p = 0.01<0.05$, and $r = 0.530$) between data management and decision-making.

6.3 Recommendations

Based on the study findings, the following recommendations were made;

6.3.1 Effect of manual data management on decision making in secondary schools

Switch to digital information management: Given that electronic systems provide scalability, accuracy, and efficiency that can significantly improve decision-making processes, schools should think about switching from manual to electronic data management.

Schools must give staff members the opportunity for professional growth and training so they can use electronic data management systems efficiently.

Staff collaboration should be encouraged in schools so that findings from mechanical data management can be shared. Promote interdepartmental dialogues to guarantee a thorough comprehension of the requirements of the students.

6.3.2 Effect of electronic data management on decision making of secondary schools

The amalgamation of heterogeneous electronic data sources promotes all-encompassing decision-making that considers several elements impacting students' academic pursuits. This all-encompassing strategy guarantees well-rounded and knowledgeable decisions.

Electronic data management solutions promote stakeholder collaboration and a sense of shared accountability for the academic performance of students. Incorporating both parents and administrators into the decision-making process promotes a diverse viewpoint.

Electronic data management is an essential instrument for secondary schools in an educational environment where data is becoming more and more important. By utilizing this technology, educational institutions set themselves up to offer the best possible instruction, assistance, and direction, hence fostering the development and success of both their student body and the community of learners at large.

6.3.3 Relationship between data management and decision making in selected secondary schools

To improve decision-making processes, schools should invest in cutting-edge data management systems as well as technologies that expedite data collecting, storage, and analysis. These systems should include reporting capabilities and visualization tools.

Data collection must be done with specific objectives in mind, making sure that the information gathered supports the important choices that must be taken.

Engagement of stakeholders: To promote a sense of ownership and cooperation, it is necessary to include parents, students, and other participants in the data-driven decision-making process. They should be consulted and given access to pertinent data.

6.4 Areas of further study

Further research can be conducted in the following areas;

i. Records management practices and school administration performance in secondary schools

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APPENDICES

APPENDIX I: CONSENT FORM

Topic: Data management and decision-making in selected secondary schools in Ntungamo Municipality

I agree to the participation of my child in the research project titled "Data Management and Decision Making in Selected Secondary Schools in Ntungamo Municipality", conducted by Atukundiire Smart who has discussed the research project with me.

I have received, read, and kept a copy of the information letter. I have had the opportunity to ask questions about this research and I have received satisfactory answers. I understand the general purposes of this research.

I consent to participate in the research project and the following has been explained to me: that my participation is completely voluntary, I have the right to withdraw from the study at any time without any implications to me, and security and confidentiality of my personal information is guaranteed.

Signature:…… Date:……

Name:…….

APPENDIX II: CHILDREN ASSENT FORM

I have been informed that my parent(s) have permitted me to participate, if I want to, in a study concerning data management and decision-making in selected secondary schools in Ntungamo Municipality. My participation in this study is voluntary and I have been told that I may stop my participation in this study at any time. If I choose not to participate, it will not affect my care in any way.

_____ _____

Name Date

APPENDIX III: QUESTIONNAIRE

Dear respondent,

I am Atukundiire Smart a student of Uganda Christian University offering a master's of education in administration and planning. I am carrying out a study on “data management and decision making in selected secondary schools in Ntungamo Municipality”.

You are kindly requested to give me a moment of your precious time to participate in the study. Your information will be treated with utmost confidentiality and will be used for academic purposes only. Thank you in advance for your co-operation.

Signature…….. Date……

ATUKUNDIIRE SMART

SECTION A: DEMOGRAPHIC DATA

You are kindly requested to tick your most appropriate option

1. Age

(a) 14-16 ☐

b) 16-18 ☐

(c) 18-20 ☐

(d) 20 and above ☐

2. Gender

(a). Female ☐

(b). Male ☐

3. Education level

(a) O-level ☐

(b) A-level ☐

SECTION B

Please respond to the following statements on the scale provided Tick appropriately using SA- Strongly agree, A- Agree, N- Not sure, D- Disagree, and SD- Strongly disagree the boxes that most closely fit your opinion

4. Effect of manual data management on decision making in secondary schools

SN	Effect of manual data management on decision making in secondary schools	SA	A	N	D	SD
1	Manual data management in schools helps in achieving continuous school improvement in terms of increased student achievement					
2	Manual data is used for accountability purposes					
3	Manual data use plays an important role in producing proof of whether actions taken by teachers and school leaders have added value for changing teachers' classroom practices and improving student learning and achievement					
4	Helps in school development that is achieved when teachers and school leaders use data to determine how the school and stakeholders					
5	Assessment data provides insight into the learning of different groups of students and provides a basis to make changes to policies regarding student learning					
6	Manual data play an important role in monitoring the effectiveness of interventions and rationalizing actions taken by teachers and school leaders					

Do you think there are effects of manual data management on decision-making in secondary schools?

Yes ☐

No ☐

If yes list them.

……

……

Please respond to the following statements on the scale provided Tick appropriately using SA- Strongly agree, A- Agree, N- Not sure, D- Disagree, and SD- Strongly disagree the boxes that most closely fit your opinion

5. Effect of electronic data management on the decision-making of secondary schools

SN	**Effect of electronic data management on decision making of secondary schools**	**SA**	**A**	**N**	**D**	**SD**
1	Electronic data management helps administrators require information to base on for decision-making to carry out their official duties and responsibilities efficiently and effectively in a transparent manner					
2	Electronic data management also acts as raw materials for research in various disciplines in the schools to facilitate the development					
3	Electronic data management has long been seen as the graveyard of information to base on for the smooth running of the school					
4	Electronic data management helps to make actions and evaluations in the school because the outcomes of the sense-making process from data can lead to different types of improvement in the school					

Do you think there are effects of electronic data management on the decision-making of secondary school**s**?

Yes ☐

No ☐

If yes mention them.

……

……

……..

……

……..

6. Relationship between data management and decision-making in selected secondary schools

Do you think there is any other relationship between data management and decision-making in selected secondary schools?

Yes ☐

No ☐

If yes mention them.

……

……

……

Thank you for your cooperation

APPENDIX IV: INTERVIEW GUIDE

1. How do you use data?
2. Do you have technology to support your data use?
3. What is the effect of manual data management on decision-making in secondary schools?
4. What is the effect of electronic data management on the decision-making of secondary schools?
5. What is the relationship between data management and decision-making in selected secondary schools?

Thank you for your cooperation