The use of School Information System in Strengthening the Management of Government Secondary Schools in Meru District Council

Imani S. Baharia

Department of Education, Humanities and Science - Tumaini University Makumira, Arusha, Tanzania

Abstract:- This study investigated the use of the School Information System (SIS) in strengthening the management of government secondary schools in Meru District Council. The study adopted the Technology Acceptance Model (TAM). The Diffusion Innovation theory and Technological Acceptance model guided this study. A qualitative research approach alongside a case study research design was adopted. The targeted population of the study was 1203 including 46 heads of schools, 1083 teachers, 46 academic teachers, 26 ward secondary officers, 01 District Education Officer (DSEO) and 01 District Information Communication Technology Officer (DICTO) of which 37 were drawn. Purposive and simple random sampling techniques were used to get respondents. Interview and questionnaire methods were used to collect data. The study's trustworthiness was maintained through the supervisor's corrections, expert advice, and following all necessary ethical procedures. The study revealed that the School Information System carries user-friendly features that strengthen the management of government secondary schools such as student information management, and teacher and staff management. However, the facilities are not sufficiently available. Furthermore, the study found that the School Information System greatly enhances data management and analysis, streamlining administrative tasks and resource management, promoting teachers' accountability and improving communication in government secondary schools. The study recommended that there should be the provision of enough facilities, alternative sources of energy, seminars, and training to promote the implementation and use of School Information System in government secondary schools.

Keywords:- School Information System (SIS), Management, Government Secondary Schools.

I. INTRODUCTION

This study investigated the use of the School Information System (SIS) in strengthening the management of government secondary schools in Meru District Council. Education is widely acknowledged as the foundation of personal and societal development, and government secondary schools play an important role in shaping nations' future (Smith, 2018). These establishments bear the responsibility of fostering the intellectual development of young individuals and equipping them with the necessary knowledge and skills for meaningful engagement in society (Brown, 2020). It is crucial that government secondary schools are effectively and transparently administered to ensure the successful realization of this mission (Johnson, 2017).

Education systems have been significantly transformed due to technological advancements. School Information System (SIS) has emerged as comprehensive solutions to the administrative and managerial challenges faced by government secondary schools. This system typically incorporates features such as student record management, attendance tracking, grading and teacher-student communication. Global research has demonstrated that the implementation of SIS can enhance efficiency, transparency, and accountability in school management (Behrouzian, 2018). The Technology Acceptance Model (TAM) guides the effective application of the school management system (Min & Jeong, 2019).

The global community has made substantial investments in the acquisition, processing, and effective utilization of high-quality data through the education management Information System (UNESCO, 2016).

Moreover, access to high-quality education remains a significant challenge in Africa. As tools for addressing this challenge, School Information System (SIS) have gained traction. Recognizing the potential of SIS, African governments have put these systems in place to improve data collection, resource allocation, and educational outcome monitoring (Chilundo, 2020).

East African countries such as Kenya, Uganda, Tanzania, Rwanda, and Ethiopia have made significant progress in implementing School Information System in government secondary schools. This system has been critical in managing growing student populations, ensuring accurate record-keeping and monitoring teacher performance (Rutayisire, 2021).

Tanzania made significant progress in the deployment and utilization of ICT during the implementation of the National ICT Policy 2003 (NICTP-2016). The Education Management Information System (EMIS) was launched in November 2004 as part of a three-year development plan (2004-2007) by the Ministry of Education and Culture (NICTP-2016).

UNESCO, in collaboration with the Tanzanian government, launched the Education Sector Management Information System (ESMIS) program in January 2008. ESMIS tasks included strengthening the existing EMIS, decentralizing the basic education management information system to the district level, and developing a new management information system (MIS) for vocational and non-formal education, technical education, and higher education. The ESMIS project set up a new database with software for each sub-sector, provided computers and accessories, and uploaded the sector database (BEST) to the Ministry's website (UNESCO, 2016).

BEMIS was later given to the system. Since then, heads of schools have collected and submitted educational data from schools during the education annual census using questionnaires that are filled out online and submitted to WEC and DSEO for verification before being submitted to PO-RALG.

The adoption of e-management in government schools is expected to result in exceptional performance in processing and publishing results, updating curriculum, pedagogy, and teaching techniques to produce more skilled labor, and transforming the education sector to be more transparent, accountable, and time-oriented, as well as quality improvement. Successful management of the education system necessitates the effective use of ICT tools for smooth operations to improve policy making, research, learning and teaching, monitoring, and evaluation through data and information.

School Information System (SIS) plays a key role in the education system specifically in the effective management that ensures the provision of quality education in government secondary schools. According to Smith (2018), government secondary schools face a number of challenges affecting the effectiveness of School Information System, including time-consuming administrative tasks, inaccurate data management, and insufficient communication channels. Administrative tasks within government secondary schools often rely on manual, paper-based systems, leading to inefficiencies, delays, and a higher likelihood of errors (Anold, 2020).

Moreover, Mbawala et al. (2024) reported that, the usability of information management system plays a crucial role in efficiently managing schools. However, challenges such as a shortage of ICT experts, inadequate internet connectivity, limited budgets, frequent electricity outages, the absence of user-friendly software, and difficulties in system integration have been identified as hindrances to the effective utilization of the School Information System.

According to Mulokozi and Kitula (2023) despite the challenges such as insufficient facilities and lack of knowledge of using School Information System among school managers, which in some instances act as barriers to effective implementation of School Information System for management purposes, electronic governance system is still applied in the management of government secondary schools in Meru District Council. Therefore, this study investigated the use of School Information System (SIS) in the strengthening management of government secondary schools in Meru district council. The question guiding this study was; what is the of SIS in the management of government secondary schools in Meru district council?

II. METHODS

➢ Research Approach and Design

According to Sekaran and Bougie (2016), a research design is a detailed and systematic plan or blueprint that outlines the entire research process, including the goals, methods, procedures, and strategies for conducting a research study. This study employed a case study research design. A case study research design is a qualitative research method that involves an in-depth and detailed examination of a single individual, group, event, or community (Creswell & Creswell, 2022). It is a comprehensive approach that allows researchers to explore complex situations within their real-life surroundings (Creswell & Creswell, 2022). This study adopted the explanatory case study which focuses on explaining the causal relationship and understanding the underlying reasons behind the use of School Information System in strengthening the management of public secondary schools. An explanatory case study was used because it could allow for in-depth data collection through various sources such as interviews, and questionnaires (Creswell & Creswell, 2022). Furthermore, through explanatory case study research design the researcher gained a deep understanding of the context in which the problem existed, leading to logical and rich data.

➢ Targeted Population

Target population refers to the specific group of individuals or entities that a study aims to investigate or gather data from (Smith, 2020). The targeted population of this study was 1203, including, 46 government secondary schools, 46 heads of school, 1083 teachers, 46 academic teachers, 26 ward education officers, 1 District Secondary Education Officer (DSEO) and 1 District Information Communication Technology Officer (DICTO) at Meru district Council. The population was considered suitable due to its experiences and knowledge on the use of the School Information System in government secondary schools.

➢ Sampling Procedures and Sample Size

Purposive sampling technique and simple sampling technique were administered in the selection of a sample size. Purposive sampling technique used because the data will be collected from a particular subgroup or population; head of schools, ward education officers, District Secondary Education Officer (DSEO) and District Information Communication Technology Officer (DICTO who can provide valuable insights. Meanwhile, simple sampling technique used to select class teachers because of their numbers as well as provided a representative sample that accurately reflects the characteristics of the population and minimizes bias and increase generalizability of the findings (Creswell & Creswell, 2022).

A sample size of thirty-seven (37) respondents were involved including twenty (20) teachers, five (05) Academic teachers, five (05) heads of schools, five (05) ward education officers, one (1) district secondary education officer and one (1) District Information Communication Technology Officer (DICTO). This sample size fostered to more precise and accurate findings, as the sample mean or proportion becomes a better estimate of the population mean or proportion. Also, were essential to ensure the ethical treatment of research participants by minimizing the burden on individuals while still achieving the study's objectives (Creswell & Creswell, 2022).

➢ *Data Collection Tools*

The study employed interviews, and questionnaires. Questionnaires were administered to heads of schools, teachers and ward education officers. Both closed and open-ended questionnaires were used because helped to direct respondents to specific sources or materials that aid in answering questions accurately as well as provide a standardized set of questions for all respondents, ensuring consistency in data collection. Meanwhile, both structured and semi-structured interview used by researcher. Interview technique was administered because is a primary method for collecting qualitative data, they allow researchers to gather in-depth information, insights and perspectives from participants. Also, provide context to research findings by allowing participants to elaborate on their experiences, beliefs and attitudes which is essential for a deeper understanding of the research topic (Kumar, 2019).

➢ *Trustworthiness of the Study*

The trustworthiness of the study pertains to its credibility, transferability, dependability, and confirmability (Segal & Coolidge, 2018). To ensure the trustworthiness of this study, the research instruments were refined based on feedback from research experts, the researchers' supervisors, and fellow students. Expert opinions were utilized to make necessary corrections, thereby ensuring the validity of the instruments. The aim was to ensure that the instruments effectively captured the required information from respondents. Additionally, data collection and report writing procedures were meticulously followed, including providing clear instructions to participants and preparing clear and unbiased questionnaires. These procedures incorporated feedback and revisions from research experts and

supervisors, which were crucial to maintaining the trustworthiness of the research.

➢ *Data Analysis*

Data analysis is the process of inspecting, cleaning, transforming, and modeling data to discover useful information, draw conclusions and support decision-making (Hair., Bain., Anderson & Black, 2019). The study adopted the qualitative analysis method. Thematic analysis method and descriptive statistics were adopted. Thematic analysis is a qualitative research method used to identify, analyze, and report patterns within data (Creswell & Creswell, 2022). The thematic analysis was employed because it could allow the analysis of data based on the nature of the data and the research question qualitatively (Creswell & Creswell, 2022). Furthermore, thematic analysis enabled the researcher to identify underlying meanings, nuances, and relationships that could not be captured by quantitative methods.

➢ *Ethical Consideration*

Ethical considerations in research findings are critical to ensuring responsible conduct of research and the well-being of participants (Creswell & Creswell, 2017). The researcher obtained an introduction letter from Tumaini University Makumira which was sent to the district education officer of the Meru district council, where permission letters for visiting selected secondary schools were given. The researcher obtained voluntary participants through an informed consent form before conducting the research. The researcher protected the privacy and confidentiality of participants. Data were anonymized and de-identified to prevent the identification of individual participants. Also, the researcher maximized the benefits of the research while minimizing potential harm to the research participants. Additionally, the researcher reported the findings truthfully and accurately by complying with the plagiarism threshold of 30% below.

III. RESULTS

The study sought to find out the use of School Information System (SIS) in strengthening the management of government secondary schools in Meru district council. Figure 1 show the extent school information (SIS) contributes to effective school management in government secondary schools.
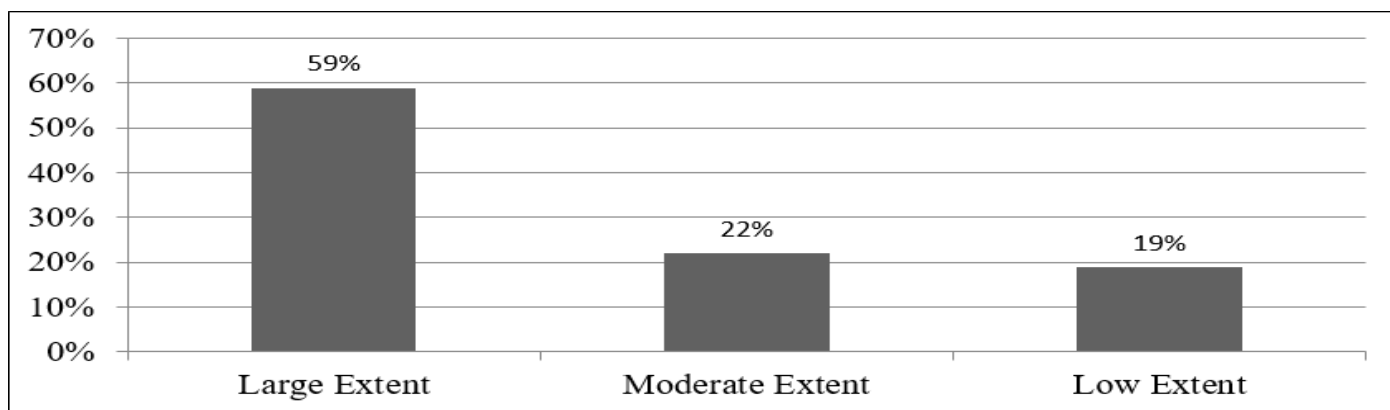

Fig 1 The Extent SIS Contribute to Effective School Management

Data in Figure 1 shows that, 59% of the respondents reported that, school information system contributes to effective school management to a large extent. 22% reported that, school information system contributes to effective school management in moderate extent and 19% reported that, school information system contributes to effective school management in low extent. The responses revealed that, SIS has large contribution to effective school management in government secondary schools. One of the respondents through interview conquered with the findings who explain that;-

School information system has higher contribution in effective school management because it ensures data centralization and accessibility, streamlined administrative processes, enhanced communication and collaboration, data analysis for informed decision-making, resource optimization and support for personalized learning (Interview, District Information Communication Technology Officer, and 6th April 2024).

➢ *Another Respondent Added that;-*
School information system is largely contributing to effective management of government secondary schools through simplifying the whole process of management based on teaching activities and administrative works such as students' academic performance records, curriculum implementation data and students' attendance data (Interview, District Secondary Education Officer, 5th April 2024).

The results revealed that, school information system have large contribution on effective school management in government secondary schools. School information system enhances data centralization and accessibility, streamlined administrative processes, enhanced communication and collaboration, data analysis for informed decision-making, resource optimization and support for personalized learning which important roles in strengthening effective school management are.

➢ *Roles of SIS on Effective School Management*
This sought to know the roles of school information system (SIS) on effective school management in secondary schools. The questionnaires responses are presented in table 1.

Table 1 Roles of SIS on Effective School Management (N=35)

Responses	Frequency	Percentages (%)
Enhancing data management and analysis	33	94.2
Streamlining administrative tasks	27	77.1
Enhancing resource management	19	54.2
Promoting teachers' accountability	24	68.5
Enhancing communication	16	45.7

Data in Table 1 showed that, 94.2% of the respondents reported that, school information system enhancing data management and analysis. Through interview one of the respondents said;-

SIS enhances data management by centralizing all relevant information into a single platform. This consolidation of data allows for easier access, organization, and retrieval of critical information such as student records, attendance data, grades, and disciplinary actions. This ensures data integrity and confidentiality while also reducing the risk of errors associated with manual record-keeping. The respondent further said that, despite of this role but some teachers lack knowledge and skills that hindering effective use of SIS in data management (Interview, District Information Communication Technology Officer, and 6th April 2024).

➢ *Again, it was Verified that;-*
"School information system becomes one of the safe way to improving data management practices through conducting in-depth data analysis to identify trends patterns, and areas for improvement. Leveraging advanced analytics tools within these systems, enable administrators generate actionable insights from large data sets. For example, track students' performance in the right time and assess the effectiveness of instructional strategies based on real-time feedback." (Interview, District Secondary Education Officer, 5th April 2024).

The results revealed that, school information system enhancing data management and analysis in strengthening effective management of schools. The utilization of a comprehensive school system empowers government secondary schools to optimize their operations through efficient data management practices and insightful data analysis capabilities. On the other hand, despite of the role of School Information System (SIS) in enhancing data management and analysis but some teachers lack skills and knowledge of implementing School Information System effectively due to absence of frequently training.

Furthermore, Table 1 showed that, 77.1% of the respondents reported that, school information system enhancing streamlining administrative tasks. This confirmed by one of the interviewee who said that;-

School Information System is software solutions designed to manage and streamline administrative institutions. This system automates routine administrative processes such as student enrollment, attendance tracking, grade recording, scheduling, and communication with parents. Digitalizing these tasks, save time, reduce manual errors, and focus on more strategic initiatives that benefits students and institution as whole. It was added that, teachers

need more training that can impart them knowledge and skills to strengthen effective use of SIS in government secondary schools (Interview, District Information Communication Technology Officer, 6th April 2024).

The results implied that, school information system enhancing streamlining administrative tasks in strengthening effective management in government secondary schools. However, there is need of trainings for teachers to strengthen their skills and knowledge towards effective implementation of School Information System in government secondary schools. Overall, the findings revealed that, streamlining administrative tasks contributes to effective management because enable centralizing data management, data driven decision-making and promoting efficiency and cost saves.

Again, Table 1 showed that, 54.2% of the respondents reported that, school information system enhancing resource management. This was proved by one of the respondents who commented that;-

SIS enhances resources management through the integration of financial data. Incorporating of budgeting tools and expense tracking features, school better monitor their financial resources and allocate funds efficiently. This integration helps school optimize their spending and ensure that resources are allocated where they are most needed. (Interview, District Information Communication Technology Officer, 6th April 2024).

The results indicated that, school information system enhancing resource management that strengthening the effective school management in government secondary schools. Supporting to the findings, school information has roles of enhancing resource management by automating administrative tasks, providing real-time access to data, integrating financial information, facilitating communication among stakeholders and supporting strategic planning through data analysis in strengthening effective management in government secondary schools.

Furthermore, Table 1 showed that, 68.5% of the respondents reported that, school information system promoting teachers' accountability. This confirmed by one of the respondents who said that;-

School information system (SIS) provides teachers with access to real-time student data, academic performance metrics, attendance records, and other relevant information. Having a clear overview of student progress and outcomes teachers are held more accountable for their instructional practices and student outcomes. Also, school leaders conduct regular evaluations of teachers' performance against predefined benchmarks and standards. (Interview, District Secondary Education Officer, 5th April 2024).

The results revealed that, school information system promoting teachers' accountability in strengthening effective management in government secondary schools. In general, school information system enhancing teachers' accountability towards effective school management in various ways including; automating administrative tasks, and monitoring teacher performance.

Additionally, Table 1 shows that, 68.5% of the respondents reported that, school information system enhancing communication. This was agreed by one of the respondents through interview who explain that;-

School information system encompasses various technological tools and platforms that streamline administrative processes, facilitate data management, and improve communication among stakeholders within the educational ecosystem for example, communication between administrators, teachers, students and parents (Interview, District Information Communication Technology Officer, 6th April 2024).

The results revealed that, school information system enhancing communication among educational stakeholders towards effective school management in government secondary schools. This implies School Information System is instrumental in enhancing communication and contributing to effective school management in government secondary schools through improving communication channels among stakeholders.

Overall, the study revealed that, school information system has great roles in promoting the effective management of government secondary schools because enhancing data management and analysis, streamlining administrative tasks, enhancing resource management, promoting teachers' accountability and enhancing communication.

IV. DISCUSSION

The study found that, SIS has large contribution in the management of government secondary schools through data management and analysis, streamlining administrative tasks, enhancing resource management, promoting teachers' accountability and enhancing communication. The findings matched with Technology Acceptance Model (TAM) which posits that perceived usefulness and perceived ease of use are key determinants of an individual's intention to use a particular technology (Scherer, Siddiq & Tondeur, 2019). The findings are similar to the study by Rosana (2018) found that, school management information systems provide information and various reports from the database in order to make decisions in line with the aims of the school and facilitate controlling of the activities to achieve the school aims. The findings also are line with the study by Kyriazi (2023) who revealed that school information system serves as a comprehensive database that stores and manages various types of student-related information, including academic records, attendance data, and demographic details.

Supporting the findings, the study by Nkata (2020) found that, implementing an education management information system can effectively enhance the accurate and timely collection and dissemination of quality data required

to support policy makers in planning and monitoring of academic activities on enhancing the practice of delivering quality education for sustainable development. With supportive results, the study by Shah (2019) highlighted positive impact of SIS on school administration and management including better accessibility to information, more efficient administration, higher utilization of school resources, and reduction in workload, better time management, and improvement in the quality of reports. Furthermore, school information system empowers administrators to concentrate on initiatives, saving time and resources while ensuring, saving time and resources. Also facilitate smooth communication between schools and education administrators (Shanganlall, 2024).

However, Mumtaz, (2018) viewed that; SIS had changed school management in leadership, decision-making, human resource management, communication, responsibility, planning and workload. In harmony to the current study, Khademi (2020) found that, the impact of ICT on management practices in smart schools in Iran for example, became a factor for better accessibility to information, more efficient administration, and a higher utilization of school resources. The study by USAID (2022) also matched the findings reported that, SIS is used by school to support a range of administrative activities, including attendance monitoring, assessment records, student behavior patterns, reporting, and resource management such as financial and staff allocation.

Overall, the revolution of SIS in education has become an important element on effective management of Tanzanian government secondary schools. Data management, streamlining administrative tasks, enhancing resource management, promoting teachers' accountability and enhancing communication have become important factors from SIS that fostering effective management of government secondary schools including school academic achievement, human resources such as teachers' accountability and physical resources including infrastructures as well as teaching and learning facilities.

With agreement to the findings, the study by Emami (2015) found that, school managers who used to spend a large amount of time-solving complex allocation problems (e.g., staff allocation, resource allocation, timetabling) and monitoring the school operations now have better options due to enhanced technology. Information technologies facilitate the decentralization of work tasks and coordination in an interactive communication network in real-time. The report by USAID (2022) matched the findings that, SIS is used by schools to support a range of administrative activities specifically resource management such as financial and staff allocation.

With similar results Shah (2014) reported that, staff of his selected schools believed that use of technologies had made administrative work easier with regard to accounts and resources management. Also, school management information systems increase effectiveness and efficiency by saving time and facilitating development of alternative

solutions for sophisticated problems in resources management. Baiden, et al (2023) also matched the current study found that improvement in the quality of reports have been highlighted as major impact of MIS on school administration and management such enhancement of data analysis, decision-making and accessibility of information. Similarly, (Nurhidayah, 2023; Shah, 2014 & Afzal, 2020) viewed that, as staff in schools have acquired and developed ICT skills and confidence in using the technologies; they have experienced a reduction in some aspects of their workload and ensure effective resources management through easy data analysis and communication. Similar to the findings Chudi & Ifeoma (2020) revealed that, the benefits of school information system in schools include, helps keeping students' records as well as helping in examination management.

However, SIS seems to be very vital in the school management activities but it also seems that, there number of teachers who lack knowledge, lack of training, and skills and confidence of using SIS effectively. Shah (2014) in his study matched the results that, lack of time, lack of confidence or skills, lack of training and lack of technical support have negative consequences on effective implementation of SIS in schools. In unison to the findings Forrester (2019) found that, there are various inhibiting factors in implementing School Information System (SIS) including lack of infrastructure, lack of training and support, and administrator's inability to effectively analyze data that directly impacts the use of the systems in schools. Also, the study by Chudi & Ifeoma (2020) matched the findings that, lack of technical support, inadequate user-friendly software for analyzing test results at the school level, lack of ICT support center and lack of awareness among other are the challenges of School Information System.

The findings furthermore, revealed the current situation in Tanzanian government secondary school, where most of teachers seem to have low ability of using School Information School (SIS) due to lack of enough knowledge and skills of using ICT facilities. Also, lack of frequent training for teachers based on effective use of School information system act as a factor affecting its implementation. For example, it was found that, lack of teachers qualified in technology integration, and technical problems as the major challenges affecting the effective integration of technology at school level (Ramorola, 2013). The study by Balicoco and Enad (2023) also matched the findings that, lack of training was a preventive factor for teachers' knowledge and skills of implementing school information system in secondary schools.

V. CONCLUSION

Based on the findings, the study concludes that, SIS has large contribution in the management of government secondary schools. School Information System (SIS) plays a great role in the management of government secondary schools by enabling data management and analysis, streamlining administrative tasks, enhancing resource management, promoting teachers' accountability and

enhancing communication. Also, despites that, school information system plays great role in the management of government secondary schools but there are teachers who lack knowledge and skills of implementing school information system (SIS) effectively. Also, the study found that, there is lack of training for teachers based on school information system (SIS).

The study recommends that, schools should invest in comprehensive training programs that equip teachers with the necessary skills to use these systems effectively. This could include workshops, seminars, conferences, and one-on-one training sessions. Providing teachers with the knowledge and skills they need to use these systems enhance them have better ability to integrate SIS in the management of schools.

Furthermore, schools should create a supportive learning environment to enhance effective implementation of School Information System. This can be helpful in providing ongoing technical support to teachers, creating a culture of collaboration and innovation, and encouraging teachers to share their experiences and best practices, that will enable teachers to feel more confident in using these systems and be more likely to integrate them into their teaching practices.

Also, schools should invest in high-quality School Information System is essential for their effective use in government secondary schools. Schools should prioritize investing in systems that are user-friendly, reliable, and secure. They should also ensure that these systems align with curriculum requirements and are accessible to all students, including those with disabilities. Investing in high-quality School Information System, schools can ensure that they are able to effectively support teaching and learning.

Additionally, the schools should develop a clear implementation plan for the successful integration of School Information System into teaching practices. This plan should have specific goals, timelines, and resources required for implementation. It should also outline strategies for addressing potential challenges, such as lack of access to technology or inadequate training to ensure that the integration of School Information System is done in a systematic and effective way.

REFERENCES

[1]. Afzal, J. (2020). Need Analysis of School Management System for Government Schools in Punjab (Pakistan). *International Journal of Management and Education, Volume. No. 2(7), P. 111-117*

[2]. Anold, N.S. (2020). *Education Management Information System for Tracking Students' Academic Progress in Secondary Schools*: A Case of Arusha Region. Arusha: Mandela African Institution of Science and Technology

[3]. Baiden, B, et al (2023). Management Information Systems and its Impact on Productivity in Higher Education: A Case of Colleges of Education in Ghana. *International Journal of Computer (IJC) 45(Vol. 45 No. 1:136-150*

[4]. Balicoco, N & Enad(2023). School MANAGEMENT Information System of Government Secondary Schools in Sagbayan District: A proposed Implementation. Psychology and Education: *A Multidisciplinary Journal, Vol. 13, No.1, P.1-7*

[5]. Behrouzian, M., Rezaei, M., & Siami, N. (2018).*The role of school information system in improvement of quality and efficiency of educational services. International Journal of Information Management,Vol. 38(1), 84-89.*

[6]. Chilundo, B. G., Matsinhe, S., & Mabunda, J. (2020). The Role of School Information System in Enhancing the Quality of Education in Mozambique. *In Handbook of Research on Cross-Cultural Business Education* (pp. 177-200). Nairobi: IGI Global.

[7]. Chudi, A.U & Ifeoma, D.U. (2020). Challenges of Educational Management Information System on Primary School Administration in Nsuka Local Government Education Authority of Unugu State. NATIONAL Journal of Educational Leadership (MJOEL), Vol. 5, No.2. Nnamdi Azikiwe University

[8]. Creswell, J.W & Creswell, J.C. (2022). *Research Design, Qualitative, Quantitative, and Mixed Methods Approaches.* Michigan: University of Michigan & Carnegie Mellon University

[9]. Creswell, J.W. (2018). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches.* London: Sage Governmentation

[10]. Emami, M. (2015).School Information System and their effect in primary schools of arak. *Journal of Research on Technology in Education*, Vol.*48 (4), 22–31.*

[11]. Forrester, V.V. (2019). School Management Information System: Challenges to Educational Decision-Making in the Big Data Era. International *Journal on Integrating Technology in Education (IJITE) Vol. 8, No.1.* Nova Southeastern University

[12]. Khademi, Y (2020). Educational Studies in the new Millennium: *The Impact of Management Information Systems (MIS) on Ardabil Primary Schools Administration.* Islamic Azard University

[13]. Kumar, R. (2019). *Research Methodology*: A Step by Step Guide for Beginners (5[th]ed). London: Sage Governmentation.

[14]. Kyriazi, X. (2023). Leveraging Student Information Systems for Data-Driven Decision Making. Retrieved in 31th May 2023 at https://www.classter.com

[15]. Mulokozi, A.M & Kitula, R.R. (2023). *Electronic Governance System Implementation and its Influence on Government Secondary School Management*: A Case Study of Meru District, Tanzania. Mwanza: St. Augustine University of Tanzania (SAUT)

[16]. Mumtaz, S. (2018). Factors Affecting Teachers' Use of Information and communications technology: A review of the literature. *Journal of Information Technology for Teacher Education,* 9 (3), 319–341.

[17]. Nkata, A. (2020). *Education Management Information System for Tracking Students' Academic Progress in Secondary Schools*: A Case of Arusha Region. Arusha: Mandela African Institution of Science and Technology

[18]. Nurhidayah, R (2020). *Management Information in Private Universities and Impact on Productivity.* International Journal of Management and Business Economics.

[19]. Ramorola, M. (2013). Challenge of Effective Technology Integration into Teaching and Learning. *Africa Education Review Vol. 10, No.4, P.654-670.* University of South Africa

[20]. Rosana, E. (2022). The Role of School Operators in Data and Information System Management and Service to Improve School Quality. *Indonesian Journal of* Education (INJOE), Vol. 3(2), P. 216-225

[21]. Rutayisire, R., Oluoch, W., & Tamo, K. (2021).Improving Education Management through School Information System : Evidence from Rwanda. In Proceedings of the 2021 6th *International Conference on Education and Multimedia Technology* (pp. 44-49).

[22]. Samawi, K & Tayem, M., (2015).A Comparative Analysis of Higher Education Management Information Systems (MIS) in the UAE. The International Journal of Information and Communication Technology.

[23]. Shah, M (2019). *Impacts of Management Systems (MIS) on School Administration: What the Literature Says*. University of Management and Technology.

[24]. Shanganlall, A. (2024). The Role of Student Information Systems in Higher Education. Retrieved on 17th November 2021 at https://www.iitms.com

[25]. Smith, J, (2020). *An Analysis of Customer Satisfaction*. In K. Brown (Ed), Research Methods in Business (pp.45-62). Academic Press

[26]. Smith, J. (2018). *The Impact of School Information System on Educational Outcomes.* Journal of Educational Technology & Society, 21(3), 170-182.

[27]. UNESCO. (2016). *Information and Communication Technology (ICT) in Education in Asia*: A Comparative Analysis of ICT Integration and E-Readiness in Schools across Asia. UNESCO Bangkok.

[28]. UNESCO. (2018). *Re-orienting Education Management Information Systems (EMIS) towards Inclusive and Equitable Quality Education and Lifelong Learning Subosa M, West M*., Document code:ED-2018/WS/11.

[29]. URT (2021).*Tanzania's Regions and Districts Composition*. Dar Es Salaam: URT

[30]. USAID (2022).*School Information System (SIS) Sustainability Plan - Mainland Tanzania June 2022*. Dar Es Salaam: USAID