

**IMPACT OF STUDENTS RELATED ELECTRONIC MANAGEMENT  
INFORMATION SYSTEMS ON REVENUE MANAGEMENT IN HIGHER  
LEARNING INSTITUTIONS. THE CASE OF ZANZIBAR UNIVERSITY AND  
ABDULRAHMAN AL-SUMAIT UNIVERSITY**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS  
ADMINISTRATION IN FINANCE (MBA-FINANCE)  
DEPARTMENT OF ACCOUNTING AND FINANCE  
OF THE OPEN UNIVERISTY OF TANZANIA**

**2023**

**CERTIFICATION**

The undersigned certifies that he has read and here by recommends for acceptance by The Open University of Tanzania a dissertation entitled, ***Impact of Students Related Electronic Management Information Systems on Revenue Management in Higher Learning Institutions: The Case of Zanzibar University and Abdulrahman Al-Sumait University***. In partial fulfilment of the requirements for the award of the Degree of Master of Business Administration in Finance (MBA – Finance).

.....

Dr. Ediphonce Nfuka

**(Supervisor)**

.....

Date

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I, **Khadija Mohamed Saleh**, declare that the work presented in this dissertation is original. It has never been presented to any other university or institution. Where other people's works have been used, references have been provided. It is in this regard that I declare this work as originally mine. It is hereby presented in partial fulfilment of the requirement for the Degree of Master of Business Administration in Finance (MBA – Finance).

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Signature

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Date

**DEDICATION**

I dedicate this study to my family for their love, support, patience, and encouragement during the whole journey of my study. I love you all.

## **ACKNOWLEDGEMENTS**

I am grateful to all individuals and organisations which in one way or another have contributed to successful completion of this dissertation.

My special appreciation and thanks to my supervisor, Dr Edephonc Nfuka who has tirelessly worked to support me throughout this tough journey. His guidance and support have showed me the path to grow as a researcher.

I also would like to thank all the respondents who participated in this study as well as the management of the HLIs that were involved for granting me permission to do my fieldwork in their institutions. I also owe thanks to colleagues at my workplace, Finance Department at Zanzibar University for their encouragement and support.

Last, but not least, I want to thank my family: my dad who passed away during this master program on 16.04.2023, for his encouragement and support – may Allah forgive him and grant him Jannat Firdaus, my mom for her continued love and encouragement, my husband Dr Yahya Hamad Sheikh for his love, patience, and support, my kids for their love and patience, as well as my brothers and sisters.

Thanks, and praise go to Allah for the strength, persistence, and intellect He gave to me to make this study possible, and for everything.

Khadija Mohamed Saleh.

## **ABSTRACT**

Electronic Management Information Systems (EMIS) are widely used for decision-making, coordination, and control, and in the domain of revenue management, they have been widely associated with efficiency and effectiveness. This study examined the impact of students related EMIS in the domain of Higher Learning Institutions (HLIs). A quantitative research approach was used, where questionnaires were distributed to 82 students and 29 staff at Zanzibar University and Abdulrahman Al-Sumait University. SPSS was used to analyse the quantitative data. The study findings show that three EMIS are on place: admission system, student academic register, and accounting system in both universities. The findings show that there is high usage of the EMIS, used for a quite long period and are deemed very easy to use. The study revealed high usability to the EMIS with sound manpower and infrastructural support making them reliable for the intended use. Furthermore, there was a positive impact of the EMIS implementation to revenue management at the HLIs, where it was realised that the use of integrated EMIS resulted into increased accessibility of finance related information in addition to efficiency and effectiveness in revenue management. The study advocates for integration of EMIS within the HLIs to go beyond the core business of teaching, learning, and student management, to incorporate revenue management for better management of the HLIs.

**Key words:** Revenue management, electronic management information system, higher learning institutions.

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## **ABBREVIATIONS AND ACRONYMS**

AIS	- Accounting Information Systems
EMIS	- Electronic Management Information System
HLI	- Higher Learning Institution
IT	- Information Technology
LGA	- Local Government Authority
MIS	- Management Information Systems
NACTVET	- National Council for Technical & Vocational Education and Training
NTA	- National Technical Award
RM	- Revenue Management
SAR	- Student Academic Records
SPSS	- Statistical Package for Social Scientist
TCU	- Tanzania Commission for Universities
TRA	- Tanzania Revenue Authority
ZU	- Zanzibar University

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background to the Study**

Management Information Systems (MIS) are hailed as a key driver in facilitating and attaining efficiency and effective decision-making in organisations. Data are the lifeblood of any organisation, and managing data efficiently and effectively is paramount in increasing business competitive environments. Successful organisations should collect data of high quality to generate accurate information, which will then help in making informed decisions for the success of the organisation (Al-Mamary et al., 2016).

As organisations acknowledge the power of Information Technology (IT) in their daily operations, MIS are continuously becoming more digitalised, aiming to excel in efficiency and effectiveness in management decision-making. These are commonly known as Electronic Management Information Systems (EMIS). EMIS is used for decision-making, coordination, control, and analysis and it provides sophisticated tools for visualisation of information and display.

In financial management, technology is also revamping how financial services are made and delivered, fundamentally changing the industry itself. These primarily come from four sources: first, technological advances where internet and wireless communication technologies profoundly affect financial systems. Second, there is a change in industry structure where the technology changes the design and operation of the industry itself. Third, there is a new model of financial services provision where a multitude of delivery



channels, from brick-and-mortar to wireless and mobile devices, are being used, and fourth, changes in trading systems of which these strategies are getting consolidate and going global with the support of technology (Claessens et al., 2002). Thus, EMIS are drivers for these changes, with organisations striving to improve their financial management to put them in competitive advantage within their respective industries.

Revenue collection is one of the most challenges facing organisations, often leading to misunderstandings between management owners of an institution. It is now widely acknowledged that adequate utilisation for EMIS may help address these issues, leading to an increase in financial performance, trust, and credibility of an institution (Kimario, 2014).

At the Higher Learning Institutions (HLI), which this is the focus of this study, there is huge and challenging information needs, necessitating for the needs of smarter and reliable means for data collection, storage, processing, visualisation, and dissemination. This arises due to increased organisation size, expansion in operational scope, competitive influence, and overall environmental challenges, hence, requiring automated tools to support quick decisions and to minimise uncertainties in decision-making, planning, and monitoring and evaluation (Bright and Asare, 2019), ultimately increasing performance for the HLI.

## **1.2 Statement of the Research Problem**

Revenue management is among the major challenges facing Higher Learning Institutions (HLI). Among the measures adopted is the deployment of electronic

management information systems (EMIS) with the primary focus on boosting revenue collection and management. This includes deploying automated accounting software packages, and in some cases, integrated with other management information systems (MIS) to ease information flow to and from the accounting software in the HLI environment.

While research acknowledges the role of EMIS in revenue management and its direct impact on financial performance, little, if any, has been discussed on how these automated students management information systems contribute to this financial performance amid widely accepted integration of the systems into the traditional accounting software.

The purpose of this research is to examine the impact of the student management systems (admission and student records) and its integration with the automated financial systems on the improvement of revenue management and hence financial performance in higher learning institutions. By analysing the impact, the research contributes to a better understanding of the state of the EMIS implementation within the HLIs and how integrated EMIS between students' management and financial management arena contribute to improving financial performance of HLIs and particularly on the revenue management.

### **1.3 Research Objectives**

#### **1.3.1 General Objective**

The main objective of this study is to examine the impact of students related electronic management information systems (EMIS) on revenue management at higher learning institutions in Zanzibar.

#### **1.3.2 Specific Objectives**

1. To explore the types of EMIS supporting revenue management used for student admission, student academic register and accounting in higher learning institutions.
2. To find out the challenges to the management and use of these EMIS in relation to revenue management.
3. To examine the impact of the EMIS, i.e., admission system, student academic register and the accounting system on revenue management at the selected universities (ZU and Sumait).

### **1.4 Research Questions**

#### **1.4.1 General Research Question**

What is the impact of students related electronic management information systems (EMIS) on revenue management at higher learning institutions in Zanzibar (ZU and Sumait)?

### **1.4.2 Specific Research Questions**

1. Which information systems supporting revenue management are used for student admission, student academic register and accounting in higher learning institutions.
2. What are the challenges associated with information use and exchange between these electronic management information systems (EMIS) and revenue management in the selected HLIs?
3. What is the impact of EMIS i.e., admission system, student academic register, and accounting system on revenue management at the selected universities?

### **1.5 Relevance of the Study**

Information systems nowadays have become extremely important in business organisations. Studies point out to the importance of and the impact the EMIS have in organisations in diverse sectors, including higher education. This study aims to find out how EMIS can help manage revenue in Higher Learning Institutions (HLI), and, by extension, improve the financial performance of the HLIs. As such, the study will contribute to the domain of knowledge for both researchers and practitioners as follows:

- i. The study will extend knowledge to research in accounting management information systems and how they help in improving financial performance in HLIs.
- ii. The study will extend knowledge on the domain of information systems from the perspective of integration of accounting management systems with student related EMIS.

- iii. The study will provide practitioners, including managers, accountants, and university administrators, the practical know-how on the use of EMIS for better revenue management at HLIs.

## **1.6 Organisation of the Dissertation**

This dissertation comprises of five chapters. Chapter 1 highlighted the knowledge gap in the research area and set a stage of the research by presenting the research problem, the objectives, and the research questions. Chapter 2 presents the literature review, where following the definitions of the key terms, it presents the theoretical literature review in order to propose a conceptual framework that can be used for analysis as well as the empirical review to highlight the knowledge gap in the study area. The research design, methodology and methods for data collection and analysis are presented in chapter 3. Chapter 4 presents the empirical analysis of the data collected followed by its discussion in relation to the literature reviewed. The conclusions drawn from the study and recommendations are presented in chapter 5.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Overview**

In this chapter, various scholarly works related to this study are reviewed and discussed to get an overview of current knowledge within the domain of management information system while identifying the knowledge gap, which this study intends to contribute to.

#### **2.2 Conceptual Definitions**

This research is centred around three key concepts, which are: Management Information System (MIS), Accounting Information System (AIS), and Revenue Management (RM) as applied in the Higher Learning Institutions (HLI).

##### **2.2.1 Management Information System**

Different scholars have defined Management Information System (MIS) based on the context over which they are being used (Ajayi et al., 2007, Heidarkhani et al., 2008, and Asemi et al., 2011). At the core of these definitions are management, data/information, and organisation. Thus, overall, MIS can be defined as a system which provides organisations management, at all levels, with appropriate information based on data from both internal and external sources to allow them to make effective and timely decisions that best achieve their organisation goals and satisfy stakeholders' requirements. MIS are systems that convert data into information and appropriately communicate it to managers at all levels of an organisation, for effective decision-making and planning (Al-Mamary et. al., 2013). Thus, the main purpose of MIS is to assist the management in making informed decisions.

From a computerised point of view, it is considered as an electronic database of organised information, programmed in such a way that it provides regular reports on operations for every level of management in an organisation (Bakri et al., 2017). In the financial sector, MIS is viewed as a computerised database of financial information organised and programmed in such a way that it produces regular financial reports on operations for every level of management in an organisation (Suchi, 2017).

### **2.2.2 Revenue Management**

Revenue management (RM) is the collection of strategies and tactics firms use to scientifically manage demand for their products and services and the sales of these products and services (Talluri and Ryzin, 2004, Talluri et al., 2008). Revenue is the money generated from normal business operations and enables the optimisation of firm's inventories while also maximising profits.

From the EMIS point of view, revenue management aims to minimise cost and time by providing online services, promoting institutional performance by minimising queues of students at their offices and reducing paperwork. By doing this, not only they help in increasing institutional performance, but also maximizing collection through efficient and effective ways.

### **2.2.3 Accounting Information System**

Accounting Information System (AIS) is a type of information system that identifies, collects, processes, and communicates economic information about an entity to a wide

variety of users. AIS focuses on recording, summarising, and validating business transactions (Moddy, 2003). On its wider view, AIS is a collection of resources (people and equipment), designed to process financial and other data into information, which is used by decision-makers. It is designed to make the accomplishment of accounting functions by providing managers with the information they need to plan, control, and evaluate all the processes (Dalci et al., 2002).

By using a proper accounting system, an organisation has a leverage on ensuring basic control of the finances, and better placed on its maintenance over financial recordings, on both day-to-day financial transactions, and the periodic financial reporting, used both internally and externally. The external parties, on this context, include the proprietors, investors, creditors, financiers, government suppliers and vendors and the society at large. The reports used by these parties help them in decision-making when they want to invest and also provide loans to the organisation.

#### **2.2.4 Higher Learning Institutions**

Higher Learning Institutions (HLI) are organisations, which are concerned with generation, acquisition, and transfer of knowledge to society at the higher education level (Katharaki and Katharakis, 2010), through teaching and learning, research and development as well as advice to business firms through research and consultancies. In the World Declaration on Higher Education adopted by the World Conference on Higher Education in 1998, higher education was defined as all types of studies, training, or training for research at the post-secondary level, provided by universities or other



educational establishments that are approved as institutions of higher education by the competent state authorities (JICA, 2004).

In Tanzania, an HLI must be established through relevant laws by either the Tanzania Commission for Universities (TCU) or by the National Council for Technical and Vocational Education and Training (NACTVET) and also can be mixed depending on the programmes an institution has, admitting students who graduated from either Certificate of Secondary Education for those joining national technical award (NTA) or Advanced Secondary Education for those joining degree programmes as direct applicants. Admission at the degree programmes is also possible after graduating from NTA level 6 as well as graduates of foreign examination authorities.

### **2.3 Theoretical Analysis**

Theory can be defined as a set of interrelated concepts and ideas that are used to explain or describe a phenomenon or set of phenomena (McQuail, 1983). It is a systematic explanation of observed events or phenomena that is supported by evidence. In order to explain and discuss the patterns of the events unfolding from the impact of using the electronic management information systems on revenue management of the HLIs, systems theory has been used.

#### **2.3.1 Systems Theory**

Systems theory was first introduced in the 1940s by biologist Ludwig Von Bertalanffy and further explained on his book titled "General System Theory: Foundations,

Development, Applications" (Von Bertalanffy, 1968). Systems theory is a conceptual framework that seeks to analyse a phenomenon as a whole and is based on the principle that the component parts of a system can best be understood in the context of the relationships with each other and with other systems, rather than in isolation (Mele et al., 2009, Wilkinson, 2011). Systems theory aims to explicate dynamic relationships and interdependence between components of the system and the organisation–environment relationships (Lai and Lin, 2017).

A system is a set of components working together to achieve a common goal or objective. The functionality of each component has an effect on the performance of the entire system and each component is interdependent to one another. A system is established based on the structure and patterns of the relationships emerging from interactions among these components. In organisations, unlike biological systems, components of social organisations have their own wills and intended purposes and hence making each of the systems arising from those patterns of interactions unique (Lai and Lin, 2017). In general, systems theory focuses on three levels of observations: the environment, the social organisation as a system, and human participants within the organisation (ibid).

In Information Technology, Myers (2004) introduced the Systems theory to provide an alternative to organisational approach to analysis and development of information technology products to organisation, with a primary focus on investigating the reciprocal relationship between technologies in place and the society which uses those

technologies. In his view, concepts and techniques of systems theory are important in studying organisations during the implementation of ICT systems. Hence the system theory provides a relevant platform for studying the impact of the implementation of electronic management information systems on revenue management at the higher learning institutions.

The theory helps in getting insight into how these information systems (admission and academic records) operationally interrelate to the accounting management information systems in place on attaining the objective of improving efficiency and financial performance of the HLIs. In this way, it will help in visualising the interactions and the relationships between the different information systems with the aim of building deeper understanding of the functioning and of the outcomes of these interactions (Mele et al., 2009) within the domain of revenue management in HLIs.

## **2.4 Empirical Analysis of Relevant Studies**

This section presents a literature relevant to the discussion pertaining to the impact of the students related electronic management information system on revenue management in the HLIs. The literature is reviewed at the global level, followed by a more localised discussion in Africa and Tanzania, specifically.

### **2.4.1 General Studies**

Data is the lifeblood of today's organisations, and the effective and efficient management of data is considered an integral part of any organisation's strategy. In their study on the impact of Management Information System (MIS) adoption in managerial

decision-making, Al-Mamary et al. (2013) highlights the importance of data in organisations' decision-making process. In that study they emphasise that successful organisations should collect high quality data which, after being processed, will result in high quality information. Availability of quality information, that is, accurate, timely, and relevant is crucial for a successful and effective managerial decision-making (Al-Mamary et al., 2013). MIS are the type of information systems that take internal data from the system and summarises them into meaningful and useful forms as management reports to use in managerial decision-making. MIS improve information quality and subsequently, positively impact the managerial decision-making.

This study examines the role of EMIS, in our case, admission system and student academic register as integrated with the finance management system on revenue management. By understanding the dynamics of the EMIS adoption, the study contributes to understanding how EMIS help to increase organisation performance in terms of revenue management and consequently the management capabilities in decision-making.

#### **2.4.2 Studies in African Countries**

Across the African continent, various studies have been conducted to understand the impact of MIS in revenue management. In Nigeria, which is an economic powerhouse of the continent, Okwoli (2020) studied the effects of information management systems on revenue generation, in the public and private sectors. In his study, he asserts that MIS has become mainstream in business organisations, particularly in revenue generating

businesses in both the private and public sectors. Furthermore, the study recommends continuous integration of the MIS for effective functioning of the whole organisation. Thus, findings of this study help my study in hypothesising that MIS, especially when integrated, help to smoothen the organisation's works and help in efficient and effective revenue management.

Within the public sector, among the sectors which have been extensively researched is the Local Government Authority (LGA). A study at Homa Bay County, Kenya revealed that there is a direct positive impact on the use of electronic management information systems and revenue collection, in both efficiency and effectiveness. Moreover, the study asserts that there is a strong positive relationship between internal control systems and revenue collection, with empirical evidence of 97% of the respondents supporting the idea that the use of electronic MIS improved the internal control systems (Otieno et al., 2013). On challenges related to the use of EMIS, the study revealed that resistance to change by the council staff was derailing the full implementation of the EMIS, recommending a review of the institution's Act and statutes to cater for a seamless integration of EMIS in the management activities of the Council (ibid).

In the HLI arena, a study of the impact of MIS at University of Education Winneba, Kumasi Campus found that in addition to positive impact of MIS on school administration and management including better accessibility to information, it also contributed to more efficient administration, higher utilisation of school resources, reduction in workload, better time management, and improvement in the quality of

reports to achieve teaching and learning objectives. Furthermore, the study revealed that information systems were not fairly adequate in the university, and as a result led to inefficient utilisation of the MIS in support of administrative works, teaching and learning (Bright and Asare, 2019).

In that same study, the authors recommend effective linkage of all the information systems to enhance its usage to the benefit of all the stakeholders. It explicitly states the relevance of information in every department at university of education, and hence the need for that linkage (ibid). Findings of that study (Bright and Asare, 2019) have direct relation with this research, as it also focuses on understanding the linkages between the information from students' management (admission system and student academic register) and the finance management information system, in order to paint a broad picture of how EMIS would provide the information needed by the management and other stakeholders that will help them to make informed decisions as well as their capabilities in improving revenue management and hence financial performance of HLIs.

#### **2.4.3 Studies in Tanzania**

Most of the research conducted in Tanzania on the subject are on the Local Government Authorities. See for example, Kilonzo (2013) in Tanga Region, Nkanyanga (2013) in Kiteto District Council, Kimario (2014) in Dar es Salaam municipalities, Tarimo (2018) in Iringa Municipality, and Masanja (2019) in the Arumeru District LGAs. In these

studies, several issues affecting revenue management are discussed, and solutions recommended.

Masanja (2019) assessed the impact of the accounting information system on the financial performance in the LGAs in Arumeru District, Arusha. The study used inferential statistics to analyse the relationship between internal control challenges and organisational financial performance in the LGAs. The study revealed major challenges being unethical behaviour of employees, insufficient remuneration and impunity for fraudulent behaviour, which altogether impacted the financial performances of the LGAs. The study recommended management support on the efforts taken to adopt computerised accounting systems to improve the overall performance within the LGAs.

Kimario (2014) analysed the challenges facing the LGAs in implementing strategies to enhance revenue collections after rationalisation of Local Government taxes, while Tarimo (2018) examined the factors that affecting revenue collection by the Tanzania Revenue Authority (TRA) in the Iringa Municipal, with a focus on the political situation on revenue collection, the effects of policies on place, and the effects of the TRA support systems on revenue collection.

In Iringa Municipality, it was observed that policy arrangement and the prevailing political situation affected business operations, security of the people, as well availability and distribution of resources, ultimately impacting tax collection and administration of tax laws. It was also revealed that the policies in place at a specific point in time did affect the revenue collection for the jurisdiction (Tarimo, 2018). A gap

between projection and collection of the revenue is observed in many other LGAs, including in Dar es Salaam (Kimario, 2014), Tanga Region (Kilonzo, 2013) and in Kiteto District Council (Nkanyanga, 2013). In all these studies, common challenges include availability and adequacy of tax collection infrastructure, awareness of the taxpayers, and employee motivation and accountability. The use of automated information systems including database integration as observed at Dar es Salaam municipalities (Kimario, 2014), in addition to other measures such as outsourcing revenue collection was adopted in attempts to address those challenges, and hence maximising performance in revenue collection.

## **2.5 Research Gap Identified**

Research gap is considered as the missing piece or pieces of information or knowledge that previous studies have not so far observed. It is an area that has not yet been explored or is under-explored.

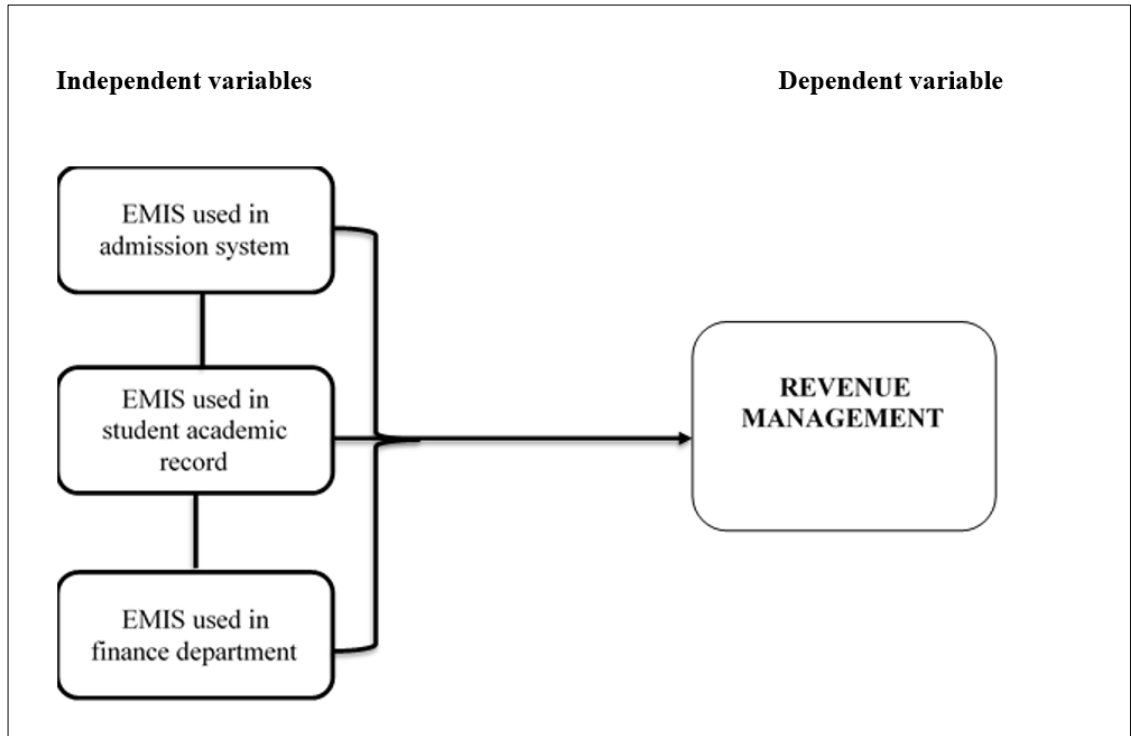
Based on the literature reviewed, the majority of the scholars, especially in Tanzania have focused on the conventional means of revenue management. Moreover, most of the research has been on the Local Government Authority (LGAs), and very little if any on the higher learning institutions (HLIs). The complexity of running and administering HLIs is well known. Thus, by focusing on the HLIs and more specifically the use of cross-institutions management information system (in our case, student management as extension of accounting information systems), the study will help in better understanding of the impact of these EMIS on revenue management in general, and specifically, within the HLIs domain.



## 2.6 Conceptual Framework

A conceptual framework illustrates what a researcher expects to find throughout the research. It defines the relevant variables of the study and maps out how they might relate to each other (Swaen, 2015) helping to analyse the stated problem. It is used to plot elements diagrammatically so that one can visualise what different components of the situation relate to the problem under investigation. A well-structured conceptual model is important as it helps a researcher to come up with meaningful findings. It is through the conceptual framework where a researcher can clearly explain his or her study so that a reader can easily understand.

Thus, in this section, the dependent and independent variables along with their relationship are presented, outlining the conceptual framework adopted in the study. In research, a variable is defined as an attribute of an object of study (Bevan, 2019). The dependent variable can be defined as the variable where its value *depends* on changes in the independent variable (ibid). Within our conceptual framework, three independent variables, which show the impact of students related EMIS are formed, and one dependent variables, which is Revenue Management, as illustrated in a schematic below diagram:



**Figure 2.1 : Conceptual Framework**

## **2.7 Theoretical Framework**

Based on the conceptual framework presented in section 2.6 above, this study will adopt three independent variables and one dependent variable. Independent variables are the three EMIS, which in our case, the HLI operates for student management and finance management. The EMIS are the Admission System, Student Academic Register, and Finance Management System. All these EMIS contribute to Revenue Management, which in this case is the dependent variable, as presented in the conceptual framework (section 2.6). To analyse the interplay of the stated variables – the EMIS and its effect on the revenue management, systems theory is used.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Overview**

Research methodology outlines a set of specific procedures or techniques used to identify, select, process, and analyse information about a research topic. This chapter presents the methodology that was used to achieve the stated objectives. It also highlights the research strategies, study population, study area, sampling, data source and data collection and analytical technique.

#### **3.2 Research Strategy**

Creswell (2003) defines research strategy as paradigms frameworks which may be either quantitative or qualitative or both (mixed approaches). For this study a Quantitative strategy was used. Quantitative strategy helped provide quantitative answers to issues related to the operation of the EMIS within the selected HLIs and their impact on revenue management and hence leading to generalisation of findings through testing the hypothesis developed (Haq, 2014).

##### **3.2.1 Survey Population**

Population refers to the complete set of individuals (subjects), objects or events having common observable characteristics in which the researcher is interested in 'studying' (Majid, 2018). The study involved a population from among students at all levels (postgraduate, undergraduate and pre-undergraduate), academicians, finance staff and

technical staff from Zanzibar University and Abdulrahman Al-Sumait University. These groups were selected as representative enough to give a picture of the use and use-implications for the EMIS to revenue management within the respective HLIs.

### **3.2.2 Area of the Research or Survey**

As noted previously, this study was conducted at the Zanzibar higher learning institutions. Two privately-owned universities were selected, namely Zanzibar University (ZU) and Abdulrahman Al-Sumait University (Sumait). The choice of private universities assumed that they are more concerned on revenue collection optimisation as compared to public universities and hence would be eager to deploy EMIS to improve their revenue management.

Based on the choice of these institutions, the outcomes of the study were expected to benefit the management, owners, staff, students, and researchers of those HLIs as well as other HLIs. Thus, this is a very interesting study as to the best knowledge of the researcher there is no such kind of study that has been conducted in Zanzibar and Tanzania in general.

### **3.3 Sampling Design and Procedures**

This success of the response rate was to large extent attributed to the design of the questionnaires for students and staff separately which were in English language and was successful. The choice of English rather than Kiswahili was due to the fact that in both the HLIs the medium of instruction is English and hence there was no need for translating them into Kiswahili.

According to Agyedu et al., (2007) population refers to the complete set of individuals (subjects), objects or events having common observable characteristics in which the researcher is interested in studying. Population therefore referred to a selected group of people set aside for a specific purpose. This study involved students, relevant management personnel, academic staffs, technical staffs and finance team of the two HLIs. This population was selected based on their direct involvement of the use of the three EMIS – admission system, student academic register, and accounting system.

### **3.3.1 Sampling Design**

Sample is the process whereby the population is limited to a relatively small portion. It promotes effective and efficient study. Based on the above elaboration, the sample size of this study was 111, where 82 were students and 29 were staff including academicians, technical staff, and staff from finance department in both the institutions. Purposive sampling techniques were adopted to select the respondents for the study.

The initial sample design targeted 100 respondents. However, since the questionnaires were deployed using Google forms, more respondents were obtained, totalling to 111 respondents.

## **3.4 Data Collection**

### **3.4.1 Variables and Measurement Procedures**

Data collection is a systematic process of gathering observations or measurements. Data collection helps researchers in collecting and gaining first-hand knowledge and original insights into a research problem (Bhandari, 2020). The type of tools for data collection depends on the research design, and hence questionnaires, which are the most used in

quantitative research due to their speed, efficiency, and cost-effectiveness in data collection, were used to collect information from the respondents.

Questionnaires can be defined as the list of questions or items used to gather data from respondents about their attitudes, experiences, or opinions concerning the subject matter (Bhandari, 2020). For ease of access to of the respondents and effective data collection and storage, google forms were used in both set of respondent groups – staff and students. Both closed and open-ended questions were included in both the questionnaires (Appendix 1) and (Appendix II) for this study to give the respondents freedom of writing their opinions and get the information in a consistent format.

### **3.4.2 Methods of Data Collection**

Data can be defined as the facts and statistics collected for reference or analysis. In a research perspective the researchers collect data related to their study and analyse them for the purpose of getting correct results hence making a good conclusion and recommendations. Data can be primary or secondary. In this study only primary data were used. Primary data are raw information and first-hand evidence directly or indirectly collected by a researcher. These types of data can be collected from different data collection tools including questionnaires, interviews, observations, and focused group discussions Streefkerk (2020), though in this research only questionnaires were used. In this study, it was important to get primary data because the information needed to construct the arguments surrounding the use of EMIS in revenue management needed

first-hand knowledge of the facts from the key stakeholders of the management information system.

### **3.5 Data Processing and Analysis**

The data, after collection, must be processed and analysed in accordance with the outline laid down for the purpose at the time of developing the research plan. This is essential for scientific study and for ensuring that we have all relevant data for making contemplated comparisons and analysis (Kothar, 2004). Once the questionnaire responses from the respondents are received the data were analysed by using the Statistical Package for Social Scientist (SPSS).

### **3.6 Validity and Reliability**

The quality of any research is highly determined by its level of validity and reliability. In order for a study to provide sufficiently sound, consistent, and relevant evidence, the information provided must be both reliable and valid (Cohen et al., 2017). Validity is the extent to which the survey information is relevant to the conclusion being drawn and is sufficiently accurate and complete to support the conclusion. Validity determines whether the research truly measures what it was intended to measure or how truthful the research results are (ibid). One way to ensure validity is to use proper data collection tools. In this study, the questionnaires were designed and tested, first in printed format, and were improved after receiving feedback from the test respondents. After the tested questionnaires were improved, they were deployed in Google forms to be filled by the intended sample of the population.

Reliability can be defined as the degree to which the instrument used will generate the same responses under similar situations. Reliability requires the use of standardized information collection instruments and survey procedures that are designed to enhance consistency. The initial distribution of test questionnaires in addition to improvement of the questionnaires was intended test the validity of the process by checking whether the same trend in response could be repeated. This was seen in the second test which was in Google forms before the actual data collection.

### **3.7 Ethical Consideration**

To undertake this study, all appropriate ethical considerations were made. Before data collection, necessary clearance was made, in accordance with guidelines of the Open University of Tanzania. All respondents were given assurance of their privacy and answering the questions was voluntary. Under no circumstance, names and other personal details of the respondents are disclosed.



## **CHAPTER FOUR**

### **FINDINGS AND DISCUSSION**

#### **4.1 Overview**

This chapter presents and provides findings and discussions based on the responses to the questionnaires. In order to meet respondents easier and reduce time the researcher prepared google forms and distributed them to the target groups – students and staff and provided a one-week period of responses. This chapter comprises of two major parts, findings which are the results of the quantitative data analyses (section 4.2) and discussion of the findings in relation to literature reviewed in chapter two (section 4.3).

#### **4.2 Characteristics of the Respondents**

The total respondents of this study are 111, out of them 82 are students (38 from ZU and 44 from Sumait) and 29 are staff (17 from ZU and 12 from Sumait). This number is beyond the target sample size of 76 students and 24 staff totalling to 100 respondents. The number increased due to the use of google forms which made it easy for the respondents to share the forms. At over 100 percent, this is an excellent response rate for analysis and making meaningful conclusions, which, according to Mugenda and Mugenda (2003), a response rate of 50 percent is enough for analysis and reporting, a rate of 60 percent is reliable and above 70 percent is excellent.

##### **4.2.1 Demographic Information**

This is used to describe the characteristics of the participants in the given population. These include gender, age, education levels, and any background characteristics that are believed to be critical in the research study (Allen, 2017). The information provides

context for the collected data, allowing the researcher to describe participants, and better analysis of the collected data based on the actual measurement. To better understand the nature of the respondents, gender, study level for students, level of education for staff, position in institution and name of institution were requested from the respondents.

### **Gender**

According to the responses collected, out of 82 respondents of the student's questionnaire, 43.9 percent were male while 56.1 percent were female, going well along the female-male ratio among HLI students in Zanzibar where more than 50% are female. Tables 4.1 and 4.2 show gender distribution among students and staff respondents.

**Table 4.1 : Gender of respondent among students**

Gender	No. of Respondents	Percentage
Male	36	43.9
Female	46	56.1
Total	82	100.0

**Source: Field Data (2023)**

Based on responses collected from a staff questionnaire of 29 respondents, 37.9 percent of respondents were male while 62.1 percent of respondents were female.

**Table 4.2 : Gender for staff respondents**

Gender	No. of Respondents	Percentage
Male	11	37.9
Female	18	62.1
Total	29	100.0

**Source: Field Data (2023)**

### Level of Study for the Students

The study levels among the student respondents were categorised as certificate, diploma, degree and masters based on the levels of training the two HLIs are providing. The data show that the majority of the respondents are pursuing their degrees and diploma with lower number at certificate and masters degree, as shown Table 4.3.

**Table 4.3 : Level of study for student respondents**

Level of Study	No. of Respondents	Percentage	Cumulative Percentage
Certificate	2	2.4	2.4
Diploma	30	36.6	39.0
Degree	42	51.2	90.2
Masters	8	9.8	100.0
Total	82	100.0	

**Source: Field Data (2023)**

### Type of Staff

To build a broad picture of where exactly the responses come from, the researcher wanted to know the type of staff involved. In both the HLIs, the staff respondents were nearly half-half between academic and non-academic staff, as shown in Table 4.4. From non-academic staff a good number (20.7 percent) were technical IT staffs.

**Table 4.4 : Type of staff**

Position	No. of Respondents	Percentage
Academic Staff	13	44.8
Administrative Staff	10	34.5
Technical Staff	6	20.7
Total	29	100.0

**Source: Field Data (2023)**

### **Educational Levels for the Staff Respondents**

To further understand characteristics of the respondents, staff respondents were asked about their highest level of educations attained. Due to a mix of academic and non-academic staff, there was nearly equal distribution of the staff between the levels certificate, diploma, degree, masters, and PhD, though the majority were master's degree holders (48.3%), as outlined in table 4.5.

**Table 4.5 : Education levels of staff respondents**

<b>Education Level</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Cumulative Percentage</b>
Diploma	1	3.4	3.4
Degree	8	27.6	31.0
Masters	14	48.3	79.3
PhD	6	20.7	100.0
Total	29	100.0	

**Source: Field Data (2023)**

#### **4.2.2 Experience of Using EMIS**

Use experience was measured in the form of duration over which users, both the students and staff have been using the various EMIS (admission, student academic register, and accounting system) within their respective institutions. Duration of use for students, in principle, has a different implication and meaning from that of staff, as students are normally bound to stay at an HLI for a certain period of time. Hence, this was administered differently.

### **Duration of Using EMIS for Students**

For students, the use of EMIS was based on two systems, admission system and student academic register, with a sort of a link to financial details which are the results of linkage between the two systems and accounting system. The data show that the majority of students in both HLIs had used the systems for more than one year with 68.3 percent of the respondents. This indicates that the student respondent had enough use experience to give genuine opinions on the EMIS under the study. Table 4.6 shows use experience among student respondents.

**Table 4.6 : Duration of using EMIS for student respondents.**

<b>Duration of EMIS</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Cumulative Percentage</b>
Less than month	6	7.3	7.3
Between one to six months	5	6.1	13.4
Between six months to one year	15	18.3	31.7
More than one year	56	68.3	100.0
Total	82	100.0	

**Source: Field Data (2023)**

### **Duration of Using EMIS for Staff**

The study shows that the majority of respondents using EMIS more than one year consisted of 82.8 percent, a clear majority which suggests enough experience for the staff involved. Table 4.7 shows the duration over which the surveyed staff had been using the EMIS. Depending on the group of staff, EMIS here directly represent all the

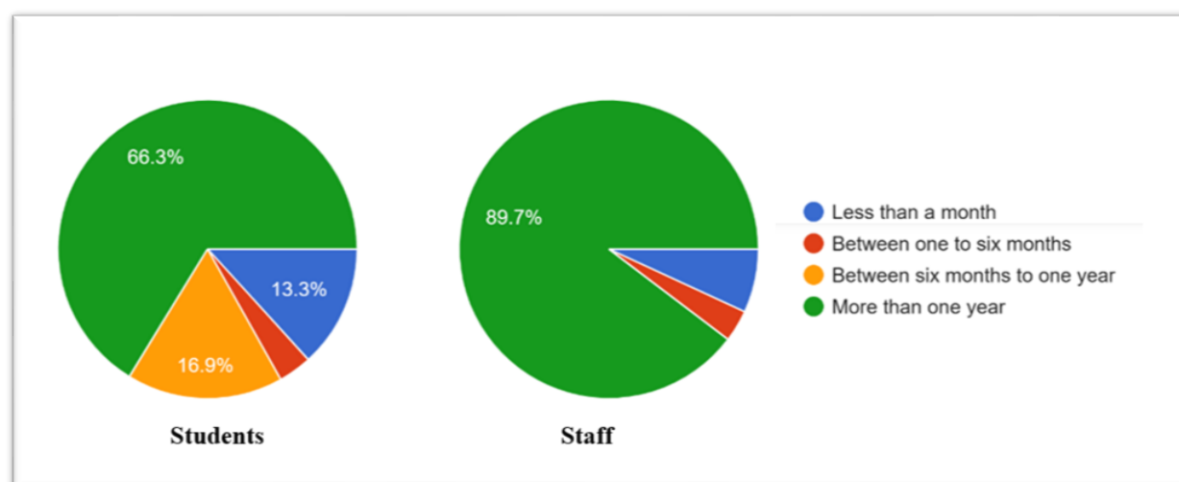
three systems – admission, student academic register and the accounting information system.

**Table 4.7 : Duration of using EMIS for staff at the two HLIs.**

Duration of using EMIS	No. of Respondents	Percentage
Less than month	4	13.8
Between one to six months	1	3.4
More than one year	24	82.8
Total	29	100.0

**Source: Field Data (2023)**

Overall, use experience between the two groups is very high (Fig. 4.1). The percentage of respondents among the staff who stated to have been using the system for more than a year is relatively higher (89.7%) than that of students (66.3%) due to the fact that staff usually stay longer at the workplace while students have shorter duration of stay.



**Figure 4.1 : Comparison of duration of using the EMIS between students and staff respondents**

### **4.3 Presentation of the Findings**

This section presents findings of the study aimed at understanding the impact to the use of EMIS on revenue management in the Higher Learning Institutions (HLIs). The findings are based on the specific objectives in line with the main objective of the study, through the data obtained from the HLIs under the study – ZU and Sumait. To achieve the objective of this study the respondents were highly encouraged and persuaded to respond to the statements in the questionnaires objectively to ensure validity and reliability. The following is the presentation of the findings according to the measurement implemented on the data capturing tools and are organised on the order of the specific objectives.

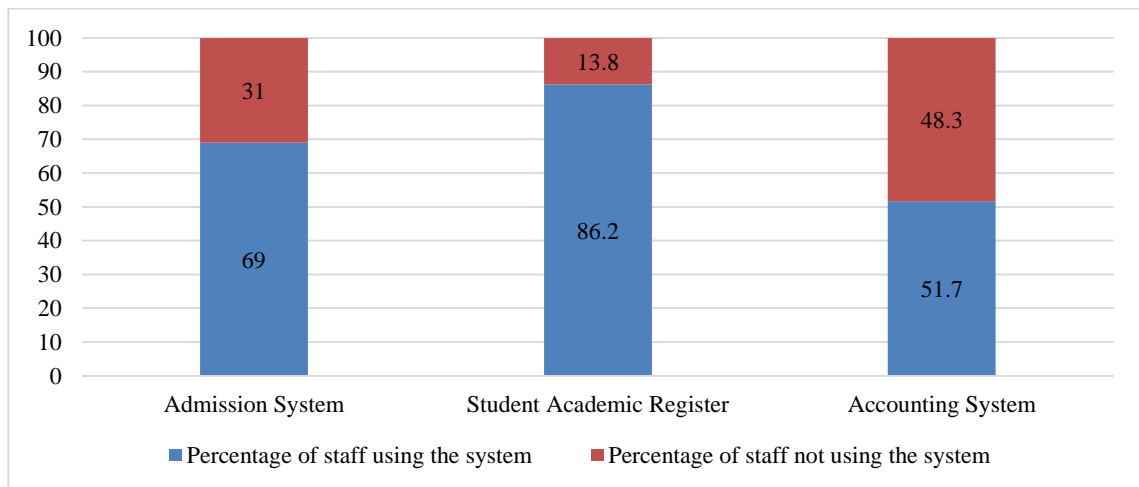
#### **4.3.1 Specific objective 1**

The first specific objective of the study was to explore the types of EMIS supporting revenue management used for student admission, student academic register and accounting in higher learning institutions. The staff questionnaire had the following responses based on types of EMIS used at both the HLIs (ZU and Sumait).

#### ***Use of the EMIS***

The question was asked if respondents used any kind of EMIS for handling students records on the following area: student admission, student academic register, and accounting systems. The respondents had chances to check if all the mentioned systems are used to handle finance-related and finance-linked student records.

The findings show that, out of 29 respondents among the staff, a good majority has reported to use all the three systems, with the student academic register having higher rate (86.2%) followed by the admission system (69%) and then the accounting information system (51.7%) as presented in figure 4.2. The accounting system is however closed to the finance staff and management only. These rates go along the natural lines of responsibilities where normally more staff are involved in managing student academic records without directly engaging in students finance management.



**Figure 4.2 : Percentage of staff reported to be using the three EMIS**

**Source: Field Data (2023)**

#### ***Duration of Using the EMIS***

To get further insight, the staff respondents were asked on the duration of their use of the stated EMIS, and the results are as outlined in tables 4.8 to 4.10.



**Table 4.8 : Duration over which staff respondents have been using the Admission System.**

<b>Duration of using admission system</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Cumulative Percentage</b>
Less than a year	14	48.3	48.3
2 to 5 years	7	24.1	72.4
5 to 10 years	8	27.6	100.0
Total	29	100.0	

**Source: Field Data (2023)**

**Table 4.9 : Duration over which staff respondents have been using the Student Academic Register.**

<b>Duration of using students' academic register</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Cumulative Percentage</b>
Less than a year	8	27.6	27.6
2 to 5 years	8	27.6	55.2
5 to 10 years	12	41.4	96.6
More than 10 years	1	3.4	100.0
Total	29	100.0	

**Source: Field Data (2023)**

**Table 4.10 : Duration over which staff respondents have been using the Accounting System.**

<b>Duration of using accounting system</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Cumulative Percentage</b>
Less than a year	14	48.3	48.3
2 to 5 years	4	13.8	62.1
5 to 10 years	6	20.7	82.8

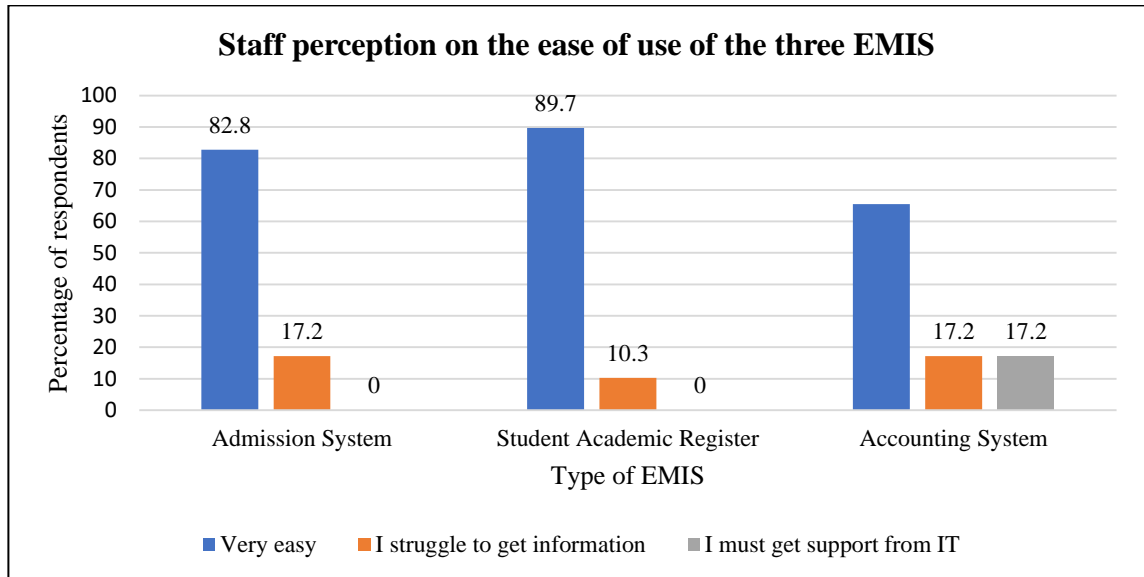
More than 10 years	4	13.8	96.6
Never used.	1	3.4	100.0
Total	29	100.0	

**Source: Field Data (2023)**

Analysing use experience of three EMIS (tables 4.9 – 4.10), the data show that, as it was the case of which systems they use most, student academic register has been used for a longer period by the respondents involved, where 41.4 percent have used the system for a period between five and 10 years, followed by the student admission. This experience is sufficient enough for the respondents to provide genuine opinions on their use and the effects of the system use. However, the data show most of the respondents (48.3%) have less than a year of experience in using the accounting system. While this may show a gap in use experience, further analysis suggest that some non-accounting staff answered this question while they were not required to answer it.

### ***Ease of Use***

The study analysed how the three EMIS are easy to use, where the staff respondents were required to choose if the EMIS are very easy and simple (VE), they struggle to get information (ST), and must receive support from IT Staff (IT) based on the admission system, student academic register and accounting system. Figure 4.3 shows the staff responses on their perception of ease of use of the three EMIS.



**Figure 4.3 : Staff perception of the ease of use of the three EMIS**

Source: Field data (2023).

The findings as presented in figure 4.3 show that the staff respondents highly perceive all the three EMIS as easy to use, where both the admission system and student academic register exceed 80 percent of the respondents who responded that the systems are very easy to use. Student academic register has scored the highest at 89.7 percent. This is in line with use experience and duration over which the staff respondents have been using the system. The accounting system has the lowest percentage at 65.5 and this could be associated with the responses related to use and duration of use. In all the three EMIS, very small number responded that they struggle to get information or need support from IT department, where none of the respondents stated that they seek support for use of admission or student academic register.

#### 4.3.2 Specific objective 2

The second specific objective of the study focused on challenges associated with EMIS – admission system, student academic register, and accounting system – in relation to revenue management in the selected HLIs. To work on this objective, the study sought to understand students’ awareness on the availability of the systems and their features as well as how the systems use those features. The features that were asked are: checking payment status, generating payment invoice for students, viewing billing status, payment receipts, updates of the outstanding balances as well as frequency and efficiency of services provided through those features.

##### **Students Awareness on the Availability of Features to Check Payment Status**

The study sought to understand the awareness of the students on the availability of services to check payment status directly from the student academic register. The data show that the majority of students are aware of the availability of these facilities, where 90.2 percent of the respondents responded positively while only 9.8 percent were not aware if they can directly get status of the payments from their system (Table 4.11).

**Table 4.11 : Student awareness on the availability of services to check payment status in the student academic register.**

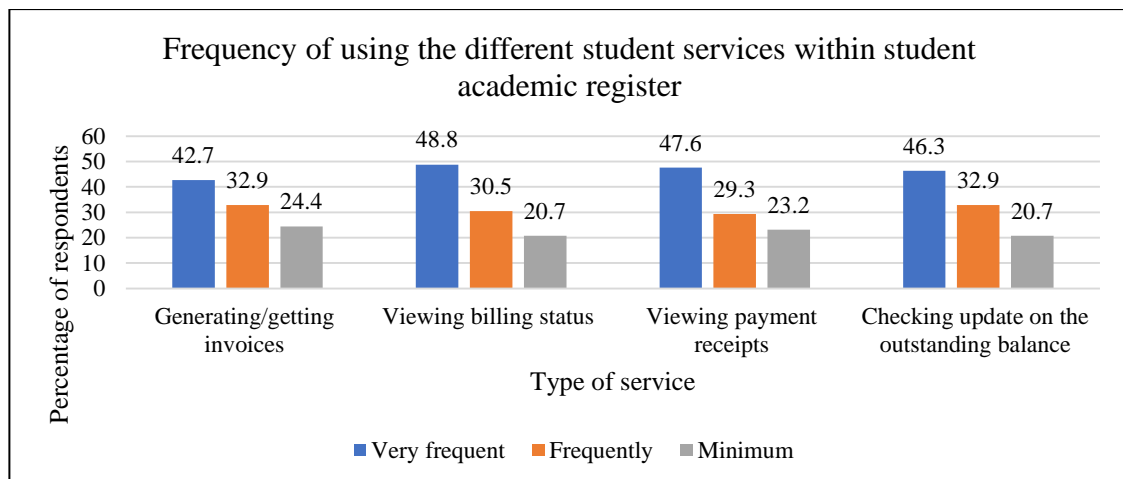
<b>Awareness on Payment status</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Cumulative Percentage</b>
YES	74	90.2	90.2
NO	8	9.8	100.0
Total	82	100.0	

**Source: Field Data (2023)**

### Frequency of Use of the Various Finance-related Services Available in the Student Academic Register

On the use of the various finance related features from the student related EMIS, including generate and accessing invoices, viewing billing status, viewing/printing receipts and getting updates on the outstanding balance. Most of the student respondents either frequently or very frequently use those services. Figure 4.4 shows frequency of use of the different services by the student respondents, presented in terms of percentage.

Based on the data presented in figure 4, 42.7 percent frequently generate and access their invoices with 32.9 percent frequently using the service, while 48.8 percent reported very frequent use in viewing billing status and 35.5 percent stated that they frequently view billing status with the student academic register.



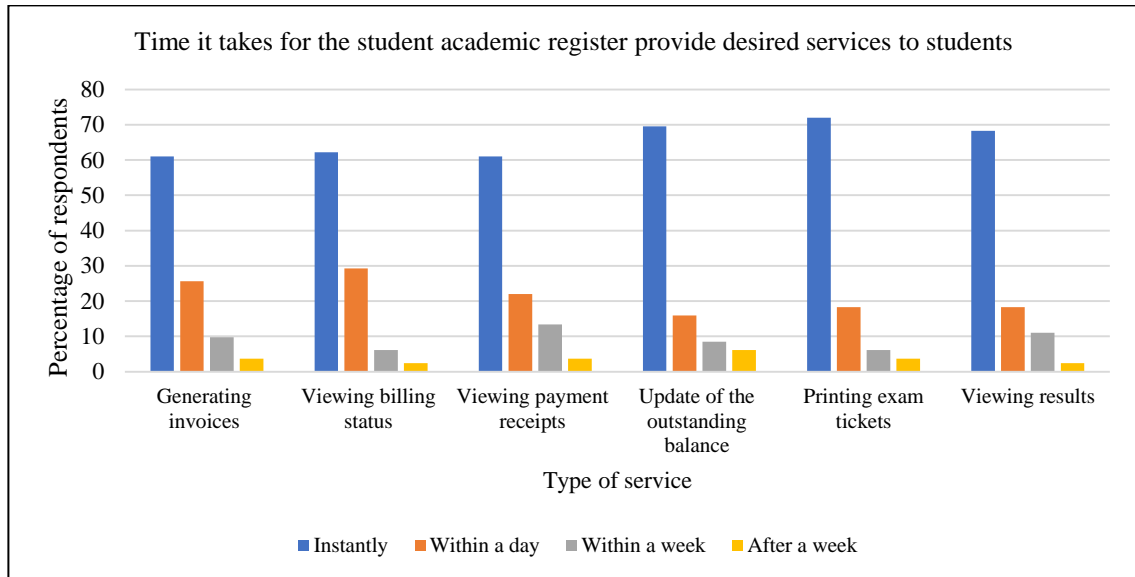
**Figure 4.4 : Frequency of using the different student services within student academic register.**

**Source: Field data (2023).**

The same scenario of the use of the finance service provided by the student academic register repeated on the issues of viewing receipts and getting updates on the outstanding balance. On the service of viewing payment receipts, 47.6 percent stated that they very frequently use the service with 29.3 percent frequently using it. Further, the findings show that 46.3 percent of respondents view outstanding balance status very frequently and 32.9 percent of them use frequently. In all four cases, the percentage of respondents who stated a minimum use of the services stands at around only 20 percent.

#### **Efficiency in the Use of Finance-related Services in the Student Academic Register**

The study looked at how fast the finance-related services are available in the student academic register after requisite actions are made. The respondents were asked to choose if they get the services instantly, within a day, within a week or after a week depending on the services they want within the academic register. The services surveyed are getting invoices, information on the billing status, payment receipts, outstanding balance, exam tickets and viewing results, and the results are presented in Figure 4.5.



**Figure 4.5 : Time it takes for the student academic register provide desired services to students**

**Source: Field data (2023).**

On invoice generation, student respondents were asked how long it normally takes to generate or get the invoice on any service a student want to pay within the student academic register. Most of the respondents had positive responses, where out of the 82 respondents, 50 which is equivalent to 61.0 percent responded that they get the service immediately, followed by 21 (25.6%) who responded that they get it within a day. Small number reported to receive within a week (9.8%) and after a week (3.7%). Regarding billing status, 91.5 percent receive the service within a day, with 51 respondents (62.2%) receiving instantly and 24 respondents (29.3%) receiving within a day. A small number responded that they receive it after a day: 6.1 percent who responded that it takes a week and 2.4 percent after a week.

When asked about how long it takes to get the information on payment receipts within the student academic register, most of the respondents had an experience of receiving the services instantly with 50 respondents (61.0%) and 18 respondents equal to 22 percent of all respondents within a day. Those who use within a week were 11 equals to 13.7 percent and after a week were 3 equals to 3.7 percent. Getting updates on the outstanding balances with the student academic register also was seen to be a fast service where the majority reported to receive it instantly or within a day, at 69.5 percent and 15.9 percent respectively. Fewer respondents, 8.5 percent view the service within a week and 6.1 percent use this service after a week.

Course registration for students is normally allowed after a student has completed the prescribed payments. The data show that out of the 82 respondents, 59 equivalent to 72 percent stated that they get the service instantly followed by 15 (18.3%) who get it within a day. The remaining 5.1 percent use the service within a week and 3.7 percent after a week.

Other important services were printing exam tickets and accessing exam results once published and the student has payment the due amount. Regarding access for printing exam tickets, the majority, 68.3 percent of the respondents stated that after the student paid the required amount, the system enabled them to download the exam ticket instantly, 18.3 percent within a day, 11.0 percent within a week and 2.4 percent after a week. Regarding accessing the exam results, out of 82 student respondents, 51 equals to 62.2% stated that they have instant access, followed by 20 equalling to 24.4% within a



day. Eight respondents equivalent to 9.8% stated they experience the service access within a week and 3 respondents equal to 3.7% after a week.

Furthermore, to get the use experience and opinions on the use of the EMIS with regard finance-related student management. Staff respondents were asked questions to understand the level of integration between the three EMIS – admission, student academic register and the accounting system and how this is facilitating revenue management and reporting, state of technology, infrastructure, and manpower and how they support the EMIS and subsequently, the revenue management.

### **Integration and Data Exchange**

With respect to how the three EMIS are integrated and are able to exchange data for better revenue management, respondents among the groups of staff were first asked if the three EMIS integrated to a sense that they are able to communicate and exchange information, if the integration facilitates easy management of revenue, and if the existing technology allow provision of convenient services through the integrated systems.

The findings, as presented in table 4.12, indicate that the three EMIS - the admission system, student academic register, and accounting system are well integrated to a sense that they are able to communicate and exchange information, with 89.7 percent of respondents agreeing against 10.3 percent who did not agree. These findings indicate that integration of EMIS is helpful to revenue management within the selected HLIs.

**Table 4.12 : Sense of integration between the three EMIS for easy of communication and exchange of revenue-based information**

<b>Integration of EMIS</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Valid Percentage</b>	<b>Cumulative Percentage</b>
YES	26	89.7	89.7	89.7
NO	3	10.3	10.3	100.0
Don't know	0	0	0	100.0
Total	29	100.0	100.0	

**Source: Field Data (2023)**

On how this integration facilitates easy management of revenue, the findings show that the majority of the respondents, 89.7 percent, stated that this integration facilitate easy management of revenue, no respondent stated that it does not facilitate, and 10.3 percent of the respondents stated that they don't know if there is any facilitation (Table 4.13).

**Table 4.13 : Does the integration facilitate easy management of revenue?**

<b>Management of revenue</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Valid Percentage</b>	<b>Cumulative Percentage</b>
YES	26	89.7	89.7	89.7
NO	0	0	0	89.7
I don't know.	3	10.3	10.3	100.0
Total	29	100.0	100.0	

**Source: Field Data (2023)**

When asked whether the technology used by in the development of the three EMIS allow provision of convenient services through EMIS integration, in both the HLIs the majority supported the idea at 79.3 percent of all the respondents, and 10.3 percent disagreed with the idea and 10.3 percent stated that they don't know (Table 4.14).

**Table 4.14 : Does the existing technology allow provision of convenient services through the integrated systems?**

<b>Convenient services through integration</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Valid Percentage</b>	<b>Cumulative Percentage</b>
YES	23	79.3	79.3	79.3
NO	3	10.3	10.3	89.7
I don't know	3	10.3	10.3	100.0
Total	29	100.0	100.0	

**Source: Field Data (2023)**

Further, the respondents were asked whether, in their opinions, the existing EMIS – admission system, student academic register and the accounting system, provide a convenient way of revenue collection, 82.8 percent of respondents agreed that the EMIS provide convenient channel of revenue collection, 10.3 percent disagreed, and 6.9 percent stated that they don't know (Table 4.15).

**Table 4.15 : Opinion of the respondents on whether the EMIS provide convenient channel of revenue collection.**

<b>Channel of revenue collection</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Valid Percentage</b>	<b>Cumulative Percentage</b>
YES	24	82.8	82.8	82.8
NO	3	10.3	10.3	93.1
I don't know	2	6.9	6.9	100.0
Total	29	100.0	100.0	

**Source: Field Data (2023)**

### **Manpower and Infrastructure**

The study looked at how the EMIS –admission system, student academic register, and accounting system, are established in terms of infrastructure and the manpower manning the systems.

On whether the EMIS are based on reliable infrastructure to enable them to offer the required services in an effective way, most of the respondents among the staff from both the HLIs supported it with 79.3 percent of respondents, and 10.3 percent who disagreed, while 10.3 percent stated that they don't know (Table 4.16).

**Table 4.16 : Respondents view on whether the HLIs have sufficient and reliable infrastructure to handle the EMIS operation effectively**

<b>Availability of Reliable infrastructure</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Cumulative Percentage</b>
YES	22	75.9	75.9
NO	7	24.1	100.0
Total	29	100.0	

**Source: Field Data (2023)**

Regarding manpower, the data, as presented in Table 4.17, indicate that in both the HLIs, there is sufficient staffing capacity to handle and maintain admission system, academic register system and accounting system with 75.9 percent of respondents supporting it. A small number, at 17.2 percent did not agree, and 6.9 percent said they don't know.

**Table 4.17 : Opinion of staff respondents on whether the institution has sufficient staffing to handle and maintain the EMIS**

<b>Sufficient staffing</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Valid Percentage</b>	<b>Cumulative Percentage</b>
YES	22	75.9	75.9	75.9
NO	5	17.2	17.2	93.1
I don't know.	2	6.9	6.9	100.0
Total	29	100.0	100.0	

**Source: Field Data (2023)**

### **Reporting and Decision-support to the Management**

The study further went to look on whether the EMIS – admission system, student academic register and the accounting systems have good reporting platform to support management on the decisions related to the student academics and revenue and financial management.

Regarding the capacity of the EMIS to provide quick and accurate reporting, the findings as presented in table 4.18 show outstanding majority (82.8%) of the respondents agreed that the EMIS provide a quick and accurate reporting for the revenue management. A small fraction (10.3%) said the EMIS do not provided a quick and accurate reporting and 6.9 percent said they don't know.

**Table 4.18 : Staff response on whether the current systems provide quick and accurate report regarding admission, student academic matters and accounting issues.**

<b>Quick and accurate report</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Valid Percentage</b>	<b>Cumulative Percentage</b>
YES	24	82.8	82.8	82.8
NO	3	10.3	10.3	93.1
I don't know.	2	6.9	6.9	100.0
Total	29	100.0	100.0	

**Source: Field Data (2023)**

In pursue of whether the existing EMIS provide information that assist the management in making informed decision-making, 79.3 percent supported it, with 3.4 percent who stated that they dot provide helpful information to assist the management in decision making, and 17.2 percent stated that they don't know (Table 4.19).

**Table 4.19 : Responses on whether the existing EMIS provide information to assist the management in making informed decisions.**

<b>Formulation of well-informed decision</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Cumulative Percentage</b>
YES	23	79.3	79.3
NO	1	3.4	82.8
I don't know.	5	17.2	100.0
Total	29	100.0	

**Source: Field Data (2023)**

### 4.3.3 Specific objective 3

The last objective of this study was to examine the impact of EMIS (admission system, academic register, and accounting system) on the revenue management to the HLIs that were in the study. The study, first, wanted to understand the extent to which the three EMIS along with their integration are required with the HLIs and how easy it is to get the information within the EMIS. Later the study sought to understand the impacts including on the extent the integration contributes to the effective revenue management, and the extent the EMIS may contribute to the effective payment and tracking (revenue management) in the university.

#### **The extent to which there is a need for integrated EMIS for improved revenue management**

In this aspect, the respondents were required to state the extent to which integration between the three EMIS (admission system, student academic register, and accounting system) is need within their HLI in a scale of 0-25, 26-50, 51-75, and 76-100 with 0-25 as the lowest in terms of need and 76-100 as the highest. Table 4.20 presents the findings where the majority – 51.7 percent ranked the need at 51-75 followed by those who ranked the need at 76-100 at 34.5 percent. A small number of respondents ranked it lower with 10.3 percent at 26-50 and 3.4 percent of respondents choose 0-25.

**Table 4.20 : To what extent integration of admission system and student academic register to accounting system is needed in this university?**

<b>Need for EMIS integration.</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Valid Percentage</b>	<b>Cumulative Percentage</b>
0%-25%	1	3.4	3.4	3.4
26%-50%	3	10.3	10.3	13.8
51%-75%	15	51.7	51.7	65.5
76%-100%	10	34.5	34.5	100.0
Total	29	100.0	100.0	

**Source: Field Data (2023)**

Another question was aimed at understanding the extent the integration of the three EMIS contributes to the effective revenue management within the HLIs. Table 4.21 presents the responses where 48.3 percent stated that it is between 51-75% and 41.4 percent at the interval of 76-100%, while 10.3 percent of the respondents ranked it at 0-25%.

**Table 4.21 : Opinion of the respondents on the extent to which the integration of the three EMIS may contribute to the effective revenue management**

<b>Effectiveness of EMIS integration to revenue management</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Valid Percentage</b>	<b>Cumulative Percentage</b>
0%-25%	3	10.3	10.3	10.3
51%-75%	14	48.3	48.3	58.6
76%-100%	12	41.4	41.4	100.0
Total	29	100.0	100.0	

**Source: Field Data (2023)**



### **Impacts of the integrated EMIS on payment handling, tracking and overall revenue management performance**

In this aspect, respondents were asked to state their view on how easy the integrated EMIS handles payments within the admission system and student academic register and the extent to which they contribute to the effective payment and tracking (revenue management) within their respective HLIs. When asked how easy it is to handle financial process including payment from within the admission and student academic register, out of 82 student respondents, 62 (75.6%) stated that it is very easy, while 13 (15.9%) stated that they struggle to get information, and 7 (8.5%) stated that they need to get support from the finance department (Table 4.22).

**Table 4.22 : How easy it is to handle financial processes including payments from within the admission system and student academic register**

<b>Needed of EMIS</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Valid Percentage</b>	<b>Cumulative Percentage</b>
Ver easy	62	75.6	75.6	75.6
Struggle to get information	13	15.9	15.9	91.5
Seek support from finance department	7	8.5	8.5	100.0
Total	82	100.0	100.0	

**Source: Field Data (2023)**

Lastly the student respondents were asked to present their opinion on the extent to which the integrated EMIS contribute to effective payment and tracking of payments within their respective HLIs. The results, as presented in table 4.23, show that the majority of

the students believe that the integrated EMIS – admission system, student academic register, and the accounting system contributes effective payment and payment tracking through the access on the admission system and the student academic register, where 50 out of 82 students (65.9%) stated that they highly contribute, 17 (20.7) stated that they contribute, while 11 (13.4%) said they that to somehow they contribute and there is no respondent who said they do not contribute.

**Table 4.23 : Students opinion on the extent to which the integrated EMIS contribute to the effective payment and tracking of payment within their HLIs**

<b>Effective payment and tracking revenue</b>	<b>No. of Respondents</b>	<b>Percentage</b>	<b>Valid Percentage</b>	<b>Cumulative Percentage</b>
Highly contribute	54	65.9	65.9	65.9
Contribute	17	20.7	20.7	86.6
To somehow contribute	11	13.4	13.4	100.0
Do not contribute	0	0	0	100.0
Total	82	100.0	100.0	

**Source: Field Data (2023)**

#### **4.4 Discussion of the Findings**

This section presents the findings as synthesised in relation to the literature review presented in chapter two. The discussion follows the order of the specific objectives of this study, which are: 1) to explore the types of electronic management information systems (EMIS) used for student admissions, student academic register and accounting in higher learning institutions, 2) to find out the challenges to the management and use

of these electronic management information systems (EMIS) in relation to revenue management, and 3) to examine the impact of EMIS, i.e., admission system, student academic register and the accounting system on revenue management at the selected HLIs.

The discussion is centred on the relationship between the three EMIS (admission, student academic register, and the accounting system) on one side, and hence were termed as the independent variables in our conceptual framework. On the other side, is the improved revenue management, considered as the dependant variable. This will help in understanding how the deployment of these systems contribute to revenue management in the domain of HLIs.

#### **4.4.1 Types of EMIS Used for Students' Management in Relation to Revenue Management at the HLIs**

In each of the two HLIs (Zanzibar University and Abdulrahman Al-Sumait University), three electronic management information systems (EMIS) are on place, namely admission system, student academic register, and accounting system. The study discovered high use of the three EMIS and have been used for quite long periods of time for both staff and students, potentially contributing to their success as platform for efficient and effective management of revenues collected from students. It was discovered that both staff use all the three EMIS, with the student academic register used by more students and staff followed by the admission and accounting system. This,

follow the natural lines of responsibilities where normally more staff are involved in managing student academic records and all students are involved.

#### **4.4.2 Challenges to the management and use of the existing EMIS in relation to revenue management**

The implementation of EMIS is usually associated with some challenges, be it technical, organisational, or from the users. The empirical literature that was presented, mostly coming from the local government authorities, pointed out to the challenges related to the use of EMIS for revenue management. Otieno et al., (2013) reported resistance to change by the council staff in Kenya, while Masanja (2019) in his study at Arumeru District, Arusha revealed unethical behaviour of employees, insufficient remuneration and impunity for fraudulent behaviour, which altogether impacted the financial performances of the LGAs. Other challenge identified are availability and adequacy of tax collection infrastructure, awareness of the taxpayers, and employee motivation and accountability. (Kimario, 2014, Kilonzo, 2013, Nkanyanga, 2013).

Contrary to the findings of the previous literature in the domain of LGAs, in its attempt to look on the challenges related to usability, use and support of the three EMIS, this study revealed rather potentials than challenges. This is evidenced by the very high number of respondents, both students and staff, who perceive the systems as easy to use with large numbers of them regularly using the EMIS. Furthermore, the study revealed sound manpower and infrastructural support to all the three EMIS making them reliable for the intended use, including revenue management in different capacities of the users.

This perceived demand and their regular use, contrary to the findings within the LGAs as presented in the literature review, is probably due to interconnectedness of the services – student management and revenue handling that is integrated and presented as integral part of the basic student management systems (admission and student academic register), clearly giving incentives for use to their users.

#### **4.4.3 Impact of the use of EMIS on revenue management at the HLIs**

The implementation of any information system is usually associated with positive impacts, though in some cases results into negative impacts. Studies, both in public and private sectors, associate the implementation of MIS to efficiency and effectiveness in revenue management. This has been widely reported in, for example, Otieno et al. (2013), Masanja (2019), Kimario (2014), and Tarimo (2018). This study further enriches the findings from those studies, where in addition to efficiency and effectiveness in revenue management, the study acknowledges the impact of the EMIS on the instant accessibility of finance related information across all stakeholders, including students and staff.

This impact is a result of integration between the three EMIS (admission, student academic register, and accounting system). The notion of integration has been recommended before. Okwoli (2020) emphasised on the need for continuous integration of MIS for smooth and effective revenue management, and hence this study affirms to this need by empirically demonstrating the performance of the three integrated EMIS on revenue management. Moreover, this study has empirically supported the need of the integration of EMIS within the HLI domain to incorporate revenue management

systems, extending the implementation beyond the teaching and learning arena as was presented by Bright and Asare (2019) who recommended effective linkage between the different information systems used for teaching, learning, and student management.

## **CHAPTER FIVE**

### **CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Overview**

This chapter presents a summary of the key findings that have been gathered on the field as well as conclusion and recommendations made based on the findings. The summary corresponds to the main findings of the study, followed by the conclusion of the study. Recommendations are actions that are recommended to be taken by the two HLIS - Zanzibar University and Abdulrahman Al-Sumait as well as other HLIs in the region on how to better implement revenue management within the scope of student management information systems.

#### **5.2 Summary and Conclusion**

The main objective of this study was to examine the impact of students related electronic management information systems on revenue management at higher learning institutions in Zanzibar. To attain this objective, three specific objectives were developed: 1) to explore the types of EMIS supporting revenue management used for student admission, student academic register and accounting in higher learning institutions, 2) to find out the challenges to the management and use of these EMIS in relation to revenue management, and 3) to examine the impact of the EMIS, i.e., admission system, student academic register and the accounting system on revenue management at the selected universities (ZU and Sumait).

The study used quantitative approach for data collection within the two HLIs where the findings were derived from combined responses of questionnaires from staff and

students within the HLIs. Three independent variables were defined representing each of the EMIS (admission, student academic register, and the accounting system) and one dependant variable revenue management was defined. This conceptual framework was developed to build a framework for analysing how the deployment of these EMIS contributes to effective and efficient revenue management.

The study findings show that in both the HLIs (Zanzibar University and Abdulrahman Al-Sumait University), three electronic management information systems (EMIS) are on place, namely admission system, student academic register, and accounting system, where findings show high usage of the three EMIS for quite long enough with majority of the respondents indicating that all the systems are very easy to use and serve their purposes. The findings show that students were able to get quick services such as invoicing, receipts, billing status, course registration, printing exam tickets as well as the results, while the staff expressed satisfaction on the smooth and effective revenue management and reporting.

It is well known that the implementation of EMIS is usually associated with some challenges, be it technical, organisational, or from the users. This study focused on understanding the usability, use and support of the three EMIS (admission system, student academic register, and accounting system) as potential challenges. The study, however, revealed high usage with very large number of respondents, both students and staff, who perceive all the three EMIS as easy to use with large numbers of them regularly using them. Furthermore, the study revealed sound manpower and infrastructural support to the EMIS making them reliable for the intended use, including



revenue management in different capacities of the users. Thus, the study underscored more potentials of the EMIS than challenges on implementation and hence their intended use of facilitating efficient and effective revenue management. The study further consider integration between the three EMIS as offering incentive for use, since the services provided by the three systems are normally related and facilitating access between the systems is a big motivation for use.

The study has also discovered a positive impact on the implementation of EMIS on the revenue management at the HLIs, with clear contribution beyond efficiency and effectiveness in revenue management. Thus study, in addition to affirming to the previously perceived contribution to efficiency and effectiveness in revenue management, it has realised that the use of EMIS, especially in the integrated manner, has resulted into increased accessibility of finance related information across all stakeholders, including students and staff directly from the systems they are using. This is demonstrated by high number of student respondents who stated instant access to information on invoicing, payment receipts, billing status, course registration, printing exam ticket, viewing exam results, directly from the EMIS as well as staff's positive responses on the provision of quick and accurate reporting, convenient channels of revenue management and formulation of well-informed decision.

Furthermore, the study advocates for integration of EMIS within the HLIs to go beyond the core business of teaching, learning, and student management, to incorporate revenue management for better management of the HLIs.

### **5.3 Recommendations**

Following the presentation of the findings from this study, as presented in chapter four, here are the recommendations made:

- i. Uses of students related systems in higher learning institutions are very important, but their linkage to accounting systems are paramount, and hence the study recommends to the HLIs to deploy these systems in a way the systems are interoperable for effective and efficient information exchange and improved revenue management.
- ii. Organizations should keep updating their staff on all discoveries happening in the area of information technology that touch the systems they are using.
- iii. Training should be a continuous process to keep staff and students updated and hence cope up with new technologies to keep the organisation performance growing.
- iv. To attain high use of the systems the required infrastructure, including internet shall be always available and functioning.

### **5.4 Areas for Further Studies**

The main objective of this study was to examine the impact of students related electronic management information systems on revenue management at higher learning institutions in Zanzibar, with data collected from two privately-owned HLIs in Zanzibar. Based on the findings of this study, further research is recommended as follows:

1. The study was conducted at privately-owned HLIs, with assumption that the private HLIs are usually more focused on optimising revenue collection, a similar study with a focus on public HLIs or a mix of the two types could be conducted.
2. Further exploratory research could also be conducted to get more insight into the evaluation of the quality of systems provided under the integrated EMIS to further enhance revenue management.
3. This research focused only on revenue management as related to the use of integrated EMIS, further research could look on the wider aspect of financial management.

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## **APPENDICES**

### **Appendix I: Research Instruments – Questionnaire for Staffs**

I am a student at The Open University of Tanzania, doing a research study as a compulsory part of my Master of Business Administration. The purpose of the research is to examine the impact of Electronic Management Information System (EMIS) i.e., integrated admission, student academic register and accounting system on revenue management in Higher learning Institutions: A case of Zanzibar University and Abdulrahman Al-Sumait University. I will be very grateful if you spend some few minutes to fill in this, questionnaire. The information collected from this questionnaire, which comprises two parts: (A) Demographic information and (B) Use of EMIS, is for this research work only and will be strictly kept and treated confidentially. May you please respond to the below questions to the best of your knowledge. For any inquiry, please do not hesitate to communicate through [dijaalmaaddi@hotmail.com](mailto:dijaalmaaddi@hotmail.com).

**PART A: DEMOGRAPHIC INFORMATION**

## i. Gender

Male	<input type="checkbox"/>	Female	<input type="checkbox"/>
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## ii. Level of Education

Certificate	<input type="checkbox"/>	Diploma	<input type="checkbox"/>	Degree	<input type="checkbox"/>	Masters	<input type="checkbox"/>	PhD	<input type="checkbox"/>
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## iii. Position in the Institution

Academic	<input type="checkbox"/>	Administrative	<input type="checkbox"/>
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## iv) Name of the institution

Zanzibar University	<input type="checkbox"/>	Sumait University	<input type="checkbox"/>
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## iv. How long have you been using any of the following EMIS: Admission system, Student Academic Register, and/or Accounting System?

Less than a month	<input type="checkbox"/>	Between 1 and 6 months	<input type="checkbox"/>	6 months to 1 year	<input type="checkbox"/>	More than a year	<input type="checkbox"/>
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### PART B: QUESTIONS RELATED TO THE USE OF EMIS

**Please tick the appropriate answer (✓)**

The following section seeks to identify the challenges associated with information use and exchange between admission system, student academic register and accounting system.

1. What kind of EMIS/information systems do you use for handling student records? If you are using more than one system tick all that apply.

Admission system

☐

Student academic register

☐

Accounting system

☐

2. For how long have you been using these systems at the university?

System	Less than a year	2 to 5 years	5 to 10 years	More than 10 years	Never used
Admission system					
Student academic register					
Accounting system					

3. Please tick (✓) on the scale below to what extent do you think it is easy to use the following systems.

1=Very easy and simple (VE), 2=I struggle to get information (ST), 3=I must receive support from IT Staff (IT).

S/NO	STATEMENTS/ITEMS	OPTION		
		VE	ST	IT
		1	2	3
1	Admission system			
2	Student academic register			
3	Accounting system			

4. Please tick (✓) on the scale below to what extent you agree with each of the following statements.

**1=Yes, 2=No and 3=I don't know.**

No	Items	1	2	3
		YES	NO	I don't know
1	Are the above systems integrated to a sense that they are able to communicate and exchange information?			
2	Does the integration facilitate easy management of revenue?			
3	Do the existing technology allow provision of convenient services through the integrated systems?			
4	Does the institution have the sufficient and reliable infrastructure to handle these systems operation effectively?			

5	In your opinion, do you think the institution have the sufficient staffing to handle and maintain these systems?			
6	In your opinion, do you think the existing systems provide convenient channel of revenue collection?			
7	Do the current systems provide quick and accurate report regarding admission, student academic matters and accounting issues?			
The following questions should be answered by management and finance staff only:				
8	In your opinion, do you think the existing accounting information system assist the management in formulation of well-informed decisions?			

Please tick (✓) on the following questions to indicate your understanding on the following issues related to integration of admission system and student academic register to the accounting system.

No.	Item	1	2	3	4
		0-25%	26-50%	51-75%	76-100%
1	To what extent integration of admission system and student academic register to accounting system is needed in this university?				
2	In your opinion, to what extent the integration of these systems may contribute to the effective revenue management in this university?				

Thank you!

**Appendix II: Research Instruments – Questionnaire for Students**

I am a student at The Open University of Tanzania, doing a research study as a compulsory part of my Master of Business Administration. The purpose of the research is to examine the impact Electronic Management Information System (EMIS) i.e., integrated admission, student academic register and accounting functions on revenue management in Higher learning Institutions: A case of Zanzibar University and Abdulrahman Al-Sumait University. I will be very grateful if you spend some few minutes to fill in this questionnaire. The information collected from this questionnaire, which comprises two parts: (A) Demographic information and (B) Use of EMIS, is for this research work only and will be strictly kept and treated confidentially. May you please respond to the below questions to the best of your knowledge. For any inquiry, please do not hesitate to communicate through [dijaalmaaddi@hotmail.com](mailto:dijaalmaaddi@hotmail.com).

**PART A: DEMOGRAPHIC INFORMATION**

v. Gender

Male ☐ Female ☐

vi. Level of Study

Certificate	<input type="checkbox"/>	Diploma	<input type="checkbox"/>	Degree	<input type="checkbox"/>	Masters	<input type="checkbox"/>
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vii. How long have you been using any of the following EMIS: Admission system, and Student Academic Register, and/or Accounting System?

Less than a month ☐Between one to six months ☐Between six months to one year ☐More than one year ☐



### PART B: QUESTIONS RELATED TO THE USE OF EMIS

**Please tick the appropriate answer (✓)**

The following section seeks to identify the challenges associated with information use and exchange between admission system, student academic register and accounting system.

5. Are you aware that you can directly get your payment and accounting/payment status directly from the student academic register? **YES/NO**
6. How frequent do you use the following accounting services within the student academic register (student's information systems)?

Service	Very frequent	Frequent	Minimum
Generating/Getting invoices			
Viewing billing status			
Viewing payment receipts			
Getting update on the outstanding balance			

Please tick (✓) on the scale below to what extent you agree with each of the following statements:

1=Instantly (IN), 2=Within a day (WD), 3=Within a week (WW), 4=After a week (AW)

S/NO	STATEMENTS/ITEMS	OPTIONS			
		IN	WD	WW	AW
		1	2	3	4
1	How long does it normally take to generate or get the invoice on any service you want to pay within the Academic Register?				
2	How long does it normally take to get information about your billing status within the Academic Register?				

3	How long does it normally take to get the information within the Academic Register about the payment you made?				
4	How long does it take to get update about outstanding balance from the Academic Register?				
5	How long does it normally take to enable you perform the following academic matters after you have paid required balances:				
	a) Course registration				
	b) Exam ticket				
	c) Results (after they are published)				

Please tick (✓) on the scale below to what extent you agree with each of the following statement.

1=Very easy and simple (VE), 2=I struggle to get information (ST), 3=I must receive support from the account section (SF).

S/NO	STATEMENTS/ITEMS	OPTION		
		VE	ST	SF
		1	2	3
1	How easy it is to get the information within the admission system and academic register including payments matters (student's management system)			
2	To what extent the admission system and student academic register including payments handling (student's management system) are needed in the university?			
3	In your opinion, to what extent these systems may contribute to the effective payment and tracking (revenue management) in the university?			

**Thank you!**