

Emerging Technologies as Panacea for Financial Management in Universities in Enugu State: Imperative for Sustainable Development Goals

¹Okoro Henry Uche, ²Ekpa Alieze S. & ³Olisa Ogechukwu Cordelia

^{1,2&3}Department of Mathematics and Computer Education, Faculty of Education, Enugu State University of Science and Technology (ESUT), Agbani, Enugu State.

Email: ¹henrooman@yahoo.com; ²sonyekpa@gmail.com; ³ogechi_c@yahoo.com

ABSTRACT

The study examined emerging technologies as panacea for financial management in universities for the realization of Sustainable Development Goals in Enugu state. Descriptive survey research design was adopted for the study. The study was guided by two research questions while two null-hypotheses were formulated and tested at .05 level of significance. The population for the study was 59 respondents which comprised 23 management staff and 36 Finance Officer from public universities in Enugu State. The entire population was used, hence, there was no sampling. The instrument for data collection was a structured questionnaire titled "Impact of Emerging Technologies on Financial Management Questionnaire (IETFMQ)". The instrument was validated by three research experts from Department of Educational Management and Measurement and Evaluation Unit of Department of Mathematics and Computer Education from Faculty of Education, Enugu State University of Science and Technology (ESUT). Cronbach alpha statistic was used to determine the reliability of the instrument which yielded .81 for cluster A and .79 for cluster B with an overall reliability index of .80. Mean scores and standard deviation were used for answering the research questions, while t-test statistic was used to test the null hypotheses. The findings of the study revealed that emerging technologies have impact on financial management in terms of budgeting and record keeping to a great extent. The researcher recommended among others that universities need to integrate emerging technologies in their financial management because of its effectiveness and efficiency.

Keywords: Emerging Technologies, Financial Management, Universities, Sustainable Development Goals

INTRODUCTION

Education empowers individuals to unlock their capabilities and enhance their quality of life. According to Fafunwa in Okoli (2016), education encompasses all human endeavors that allow individuals to gain, cultivate, and apply knowledge, skills, and attitudes for their own advancement and the betterment of society. The education system of each country plays a crucial role in driving socio-economic progress, essential for both personal and national growth (Ololube, Ololube, & Aiya, 2016). The connection between education and universities is profound, given that universities are the institutions responsible for higher education. Universities serve as

academic establishments offering various programs, including undergraduate, postgraduate, and professional courses. These institutions are hubs for producing skilled professionals to meet local and global demands. Uche (2016), characterized universities as centers of higher learning that provide both undergraduate and postgraduate education, designed to cater to people's needs and align with the specific goals of national education. The significance of universities extends to their pivotal role in societal, economic, technological, and manpower advancement across different sectors of a nation. In the context of the Federal Republic of Nigeria



(FRN, 2013), university education encompasses a comprehensive range of general and specialized knowledge and skills, enabling graduates to address industrial challenges, conduct scientific research, or engage in educational work related to their acquired expertise.

Additionally, universities are frequently regarded as the highest point of formal learning, providing advanced educational curricula and avenues for research exploration. They gain acknowledgement for their substantial contributions to knowledge and research, and their alumni typically enter the workforce and academia well-equipped. Universities have historically functioned as hubs of research and originality, significantly contributing to the progress and evolution of technology. It has become so important that every country, organization or institution, no matter how highly or lowly placed, wants to identify and embrace technology (Okigbo & Ukeh, 2020). As stated by Onyekaba (2021), technology stands as an indispensable component for any institution's sustenance, and in the case of university education, it serves as a crucial foundation. According to Okechukwu & Ukeh (2022), technology integration has taken the centre stage in the actualization of education goals.

Technology refers to the tools, techniques, and processes that are used to create, develop and improve products and services. The link between technology and emerging technologies is critical as technology itself is continually evolving and emerging technologies are often the next wave of new innovations that will change how one lives, works and interacts with the world. According to Kirmani, Wani & Saif (2015), emerging technologies have the ability to enhance, coordinate and control the operations of many organizations and can also enhance financial management. Emerging technologies are having a

significant impact on financial management. Emerging technologies such as Blockchain, artificial intelligence, and big data analytics are rapidly changing the way financial management is carried out in organizations around the world. As technology evolves and new emerging technologies emerge, the link between the two becomes increasingly important. Emerging technologies have significant implications for financial management in universities. As universities face increasing financial pressures, they are turning to emerging technologies to improve efficiency, reduce costs, and enhance the overall financial health of the institutions.

Management refers to the process of planning, organizing, directing, and controlling resources, tasks, and activities within an organization to achieve specific goals and objectives. Management involves organizing available human and material resources to attain desired goals and objectives (Nwune, Nwogbo & Okonkwo, 2016). Financial management pertains to applying established principles to the efficient utilization of organizational funds with the intent of realizing institutional plans and ambitions (Pandey, 2015). Ibara (2014), stated that financial management in educational institutions refers to the methods used to acquire the necessary financial resources for running such institutions. Pandey, as cited in Aliyu (2018), defines financial management as the process involving the planning and control of an organization's financial resources. Financial management encompasses the planning, arranging, and supervision of money inflow and outflow with the goal of achieving organizational success and progress (Umar, 2019). This research identifies how emerging technologies are influencing the financial management of universities in Enugu state, specifically exploring how these technologies can enhance financial planning, budgeting, accounting, and reporting within

universities. However, this study primarily focuses on record keeping and budgeting.

A budget is a comprehensive and coordinated financial plan for the future. Budgeting is an essential tool for effective financial management in all types of organizations, including educational institutions (Titus & Ukaigwe, 2018). As described by Horngreen & Foster in Olola (2019), a budget serves as a numerical representation of an action plan and aids in coordinating and executing that plan. Moses (2014), asserted that budgeting ensures the efficiency of school administration by guiding the pursuit of planned programs, preventing unnecessary expenses, and aligning all proposed spending with expected revenue, thereby eliminating the possibility of a deficit and fostering budget surplus. The impact of emerging technologies on university budgets can be both advantageous and disadvantageous. Budgeting can also enhance and refine record-keeping practices.

A record is a compiled, written, or electronically generated fact kept to preserve its content. It is a document that provides tangible evidence of information or past happenings. Chifwepa (2013) observed that, a record is a documented transaction and that information is what a record contains, stores, and transmits. Record keeping could be referred to as document or an account of activities or events about persons and facilities in the school that serves as references for the future. Record-keeping is one of the important tools that can also be used to guide financial issues. Each school has to keep records of all financial transactions that were effected and must be kept safely in a record book (Amirize & Ololube, 2018). Lateef & Muniru (2020) stated that record keeping in some schools is ill done, whereas, manual record keeping is inclined to errors and mistakes more especially in accounting data.

The goal of records management in educational institutions is to maximize economy and efficiency in the creation, upkeep, use, sharing, and disposal of school records throughout their existence (Webber, 2018). A study conducted by Egoeze, Misra, Maskeliūnas & Damaševičius (2018), showed that technologies have impact on school records. Nwosu in Atsu (2014), noted that the use of ICT facilities for record keeping assisted the school administrator to meet the tasks of school management in the areas of curriculum and instruction, school community relationship and school business operations. The manual filing system is obsolete in the 21st century because it does not represent the Sustainable Development Goals' Agenda.

The Sustainable Development Goals (SDGs) are a set of 17 global goals adopted by the United Nations General Assembly in 2015 as part of the 2030 Agenda for Sustainable Development. The Sustainable Development Goals (SDGs) consist of seventeen global goals designed as a blueprint to achieve a better and more sustainable future for all. Each of the 17 goals is expected to be achieved by 2030, in every country around the world. The most interesting aspect of sustainable development is the fact that it puts into consideration the present conditions of people as well as not compromising those that come later. Therefore, the concept of sustainable national development remains the modern parameter of measuring development (Chigbu, Oguzie & Obi, 2020).

Proper financial management seems to play an important role in the effective management of universities. The management of most public universities is reportedly known to misappropriate and divert funds meant for the development of such universities and general welfare of the staff and students. There are accusations

from stakeholders that some Vice Chancellors lack requisite training in financial management in terms of budgeting and record keeping. The financial management methods of Universities in Enugu state have attracted criticism from the general public and need to be reviewed. Therefore, the gap the present study filled was the impact of emerging technologies as panacea for financial management in universities for the realization of sustainable development goals in Enugu State.

Statement of the Problem

In recent years, universities in Enugu State have faced significant challenges in effectively managing their financial resources to support the achievement of sustainable development goals. The traditional approaches to financial management have often proven inadequate in addressing the complex financial needs of these institutions, hindering their ability to allocate resources efficiently, ensure transparency, and promote long-term sustainability. Additionally, the lack of integration of emerging technologies into financial management processes has further exacerbated these challenges, limiting the universities' capacity to streamline financial operations, make informed decisions, and align their financial strategies with the broader objectives of sustainable development. Unfortunately, despite all the funds made available by the government and other sources of funds available to the universities, it has been observed that the condition of teaching and learning have not improved much over the last two decades. Therefore, there is a pressing need to investigate the extent to which emerging technologies can serve as a panacea for enhancing financial management practices within universities in Enugu State, thereby contributing to the realization of sustainable development goals. This necessitated the need to ascertain the impact of emerging technologies as panacea for financial

management in universities for the realization of sustainable development goals in Enugu state.

Purpose of the Study

The main purpose of the study was to examine emerging technologies as panacea for financial management in universities for the realization of sustainable development goals in Enugu state. Specifically, the study sought to:

1. examine the impact of emerging technologies on budgeting in universities for the realization of sustainable development goals in Enugu state;
2. determine the impact of emerging technologies on record keeping in universities for the realization of sustainable development goals in Enugu state.

Research Questions

The following research questions guided the study:

1. What is the impact of emerging technologies on budgeting in universities for the realization of sustainable development goals in Enugu state?
2. What is the impact of emerging technologies on record keeping in universities for the realization of sustainable development goals in Enugu state?

Hypotheses

The following hypotheses were formulated and tested at .05 level of significance:

- H₀₁:** There is no significant difference between the mean scores of management staff and finance officers on the impact of emerging technologies on budgeting in universities for the realization of sustainable development goals in Enugu state.

H₀₂: There is no significant difference between the mean scores of management staff and finance officers on the impact of emerging technologies on record keeping in universities for the realization of sustainable development goals in Enugu state.

Research Method

The study adopted descriptive survey research design. Nworgu (2018), defined descriptive survey research design as one which aims at collecting data and describing in a systematic manner the characteristic features or facts about a given population. The population for the study was 59 respondents which comprised 23 management staff and 36 Finance Officers from public universities in Enugu State. The entire population was used, hence, there was no need for sampling. The instrument for data collection was a structured questionnaire titled “Emerging Technologies impact on Financial Management Questionnaire (ETFMQ)”. The instrument was validated by three research experts from Department of Educational Management and Measurement and Evaluation Unit of Department of Mathematics and Computer Education. Cronbach alpha statistic was used to

determine the reliability of the instrument which yielded .81 for cluster A and .79 for cluster B with an overall reliability index of .80.

However, out of the 59 copies of questionnaire administered, the researchers retrieved 54 copies from 21 management staff and 33 finance officers making it 91.53% return rate. In answering the research questions, the researcher used mean scores and cluster mean. In rating the mean scores, each response option had a numerical value based on real limit of numbers: Strongly Agree = 3.50-4.00; Agree = 2.50-3.49; Disagree = 1.50-2.49; Strongly Disagree = 0.00-1.49. t-test statistic was used to test the null hypotheses at .05 level of significant. The interpretation of the test of hypotheses was based on the significance (sig.) values from the SPSS output. The null hypotheses were not rejected when the probability values were greater than .05, but rejected when the probability values were less than .05.

Data Analysis and Results Presentation

Research Question 1: What is the impact of emerging technologies on budgeting in universities for the realization of Sustainable Development Goals in Enugu State?

Table 1: Mean Ratings of Management Staff and Finance Officers on the Impact of Emerging Technologies on Budgeting in Universities for the Realization of Sustainable Development Goals in Enugu State

S/N	ITEMS	Management Staff			Finance Officers		
		\bar{x}	SD	De	\bar{x}	SD	Dec
	Emerging technologies have impact on budgeting in universities during:						
1.	budget planning.	2.61	0.88	A	2.62	0.90	A
2.	budget preparation.	2.66	0.91	A	2.59	0.93	A
3.	budget review.	2.50	1.01	A	2.55	0.89	A

4.	budget approval.	2.59	0.85	A	2.58	0.93	A
5.	budget implementation.	2.55	0.99	A	2.66	0.90	A
Grand Mean/SD		2.58	0.93	A	2.60	0.91	A

Table 1 shows that both the management staff and finance officers agreed that emerging technologies have impact on budgeting in universities in Enugu state. The management staff means ranged from 2.50 to 2.66 while that of finance officers ranged from 2.55 to 2.66. In addition, they had cluster means of 2.58 and 2.60 as well as standard deviations of 0.93 and 0.91 respectively. Thus; the respondents were

generally of the view that emerging technologies have impacts on budgeting in universities for the realization of Sustainable Development Goals in Enugu State.

Research Question 2: What is the impact of emerging technologies on record keeping in universities for the realization of Sustainable Development Goals in Enugu State?

Table 2: Mean Ratings of Management Staff and Finance Officers on the Impact of Emerging Technologies on Record Keeping in Universities for the Realization of Sustainable Development Goals in Enugu state

S/N	ITEMS	Management Staff			Finance Officers		
		\bar{x}	SD	Dec	\bar{x}	SD	Dec
	Emerging technologies have impact on record keeping in universities when:						
6.	instructional contents are kept.	2.59	0.98	A	2.59	0.90	A
7.	records of students' attendance are stored.	2.61	0.94	A	2.62	0.94	A
8.	staff employment report are stored.	2.59	0.92	A	2.68	0.99	A
9.	students academic grade are kept.	2.65	0.95	A	2.65	0.93	A
10.	students' transcripts are verified.	2.53	0.91	A	2.62	0.95	A
Grand Mean/SD		2.59	0.94	A	2.63	0.94	A

Table 2 shows that both the management staff and finance officers agreed that emerging technologies have impact on record keeping in universities in Enugu State. The management staff means ranged from 2.53 to 2.65 while that of finance officers ranged from 2.59 to 2.68. In addition, they had cluster means of 2.59 and

2.63 as well as standard deviations of 0.94 and 0.94 respectively. Thus; the respondents were generally of the view that emerging technologies have impacts on record keeping in universities for the realization of Sustainable Development Goals in Enugu State.

Hypotheses

H₀₁: There is no significant difference between the mean scores of management staff and finance officers on the impact of emerging

technologies on budgeting in universities for the realization of Sustainable Development Goals in Enugu State.

Table 3: Summary of t-test analysis of the mean ratings of university management staff and finance officers on the impact of emerging technologies on budgeting in universities for the realization of Sustainable Development Goals

Group	N	\bar{x}	SD	df	p-value	Decision
Management Staff	21	2.58	.93	52	.102	H ₀₁ not rejected
Finance Officers	33	2.60	.91			

Data on Table 3 for university management staff and finance officers on the impact of emerging technologies on budgeting in universities for the realization of Sustainable Development Goals show that at 52 degree of freedom, the p-value was .102. The outcome of the p-value is greater than .05 level of significance set for this study. This signifies that the null hypothesis was not rejected, therefore, there was no significant difference between the mean ratings of university management staff and finance officers on the impact of emerging

technologies on budgeting in universities for the realization of Sustainable Development Goals in Enugu State.

H₀₂: There is no significant difference between the mean scores of management staff and finance officers on the impact of emerging technologies on record keeping in universities for the realization of Sustainable Development Goals in Enugu State.

Table 4: Summary of t-test analysis of the mean ratings of university management staff and finance officers on the impact of emerging technologies on record keeping in universities for the realization of Sustainable Development Goals

Group	N	\bar{x}	SD	df	p-value	Decision
Management Staff	21	2.59	.94	52	.063	H ₀₂ not rejected
Finance Officers	33	2.63	.94			

Data on Table 4 for university management staff and finance officers on the impact of emerging technologies on record keeping in universities for the realization of Sustainable Development Goals show that at 52 degree

of freedom, the p-value was .063. The outcome of the p-value is greater than .05 level of significance set for this study. This signifies that the null hypothesis was not rejected, therefore, there was no significant

difference between the mean ratings of university management staff and finance officers on the impact of emerging technologies on record keeping in universities for the realization of Sustainable Development Goals in Enugu state.

Discussion of Findings

The study's results indicated that the integration of emerging technologies has a notable impact on the budgeting processes within universities, contributing to the advancement of Sustainable Development Goals in Enugu State. This outcome aligns with the viewpoint of Moses (2014), who asserted that emerging technologies play a crucial role in enhancing financial management within the education sector. Furthermore, the study's results demonstrated that there was a lack of significant disparity between the average assessments provided by university management personnel and finance officers regarding the impact of emerging technologies on budgeting in universities, specifically in relation to achieving Sustainable Development Goals in Enugu State.

The study's findings also showed that the utilization of emerging technologies has impact on records keeping within universities, supporting the realization of Sustainable Development Goals in Enugu State. This conclusion corresponds with the assertions of Egoeze, Misra, Maskeliūnas & Damaševičius (2018), who emphasized the efficiency-enhancing impact of technologies on school record-keeping. This observation is additionally consistent with Nwosu's perspective as cited in Atsu (2014), which highlighted how the adoption of emerging technologies for record keeping aids school administrators in fulfilling their managerial responsibilities. Similarly, the study's findings established that there existed no noteworthy contrast between the average evaluations provided by university

management personnel and finance officers regarding the influence of emerging technologies on record keeping in universities, specifically in relation to achieving Sustainable Development Goals in Enugu State.

Conclusion

This study sheds light on the transformative potential of emerging technologies as a panacea for enhancing financial management practices in universities within Enugu State. The findings underscore the critical role that innovative technologies play in achieving Sustainable Development Goals (SDGs), specifically in the domains of budgeting and record-keeping. By embracing these technologies, universities can improve financial management processes, increase efficiency, reduce risk, and enhance transparency and accountability. In a broader context, the success stories presented by universities in Enugu State can serve as models for other educational institutions globally, showcasing how harnessing emerging technologies for financial management can contribute significantly to the realization of SDGs. As universities continue to adapt and innovate in their financial practices, the road to sustainable development becomes clearer, paving the way for a brighter future where technology-driven financial management is an integral driver of progress.

Recommendations

Based on the findings of the study, the researchers recommended that:

1. There is need to encourage universities to incorporate emerging technologies such as data analytics, artificial intelligence, and automation in their budgeting processes. These technologies can streamline financial planning, enhance accuracy, and provide real-time insights for better decision-making.
2. Universities should embrace emerging technologies in financial management

and invest in training staff to use these technologies effectively. This will help to improve record keeping processes and increase efficiency.

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