

## **Influence of Principals' Access to Information and Communication Technology Infrastructure on Financial Management in Public Secondary Schools in Machakos County, Kenya**

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**How to cite this article: Mutisya, G. M., Otieno, D., & Kinyanjui, G. (2023). Influence of Principals' Access to Information and Communication Technology Infrastructure on Financial Management in Public Secondary Schools in Machakos County, Kenya. *Journal of Education*, 3(3), 35-40.**

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### **Abstract**

Many organizations have adopted ICT to perform their daily activities. In educational institutions, ICT is used to improve performance. However, this has not been the case as some of the initial problems are still experienced today. This study sought to investigate the influence of principals' access to information and communication technology on financial management in public secondary schools in Machakos County. The study was guided by the theory of the Technological Acceptance Model. The study adopted a descriptive research design, questionnaires and interview schedules were used to collect data. The study targeted 66 respondents which constitute 33 principals and 33 bursars. A purposive sampling technique was used to select the sample. The data was analyzed using descriptive and inferential statistics. The study established that principals had access to basic ICT infrastructure and this significantly influenced their use of ICT in financial management. The study recommends that the government through MOE enhance wider access to ICT infrastructures in schools and principals to develop skills that will enable them to utilize more of the available ICT infrastructures.

**Keywords:** *Principals' Access, Information and Communication Technology, Infrastructure, Financial Management*

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### **1.0 INTRODUCTION**

According to UNESCAP (2001), ICT is the technologies people use to share, determine, collect, and communicate information via computer and its network. Across the world, ICT is increasingly used in schools to carry out different tasks. Many countries regard understanding ICT and mastering its basic skills and concepts as part of the core of education. The adoption of ICT in the management of school finance cannot be neglected because of its ability to control fraud, enhance accountability, and reduce administrative costs (Ministry of Finance, 2010).

Commission of the European Communities (2008) noted that all European countries have successfully adopted the use of ICT in schools. They allocated adequate funds to purchase the required ICT infrastructures. They also directed other resources to support teacher training and capacity building to equip them with the required knowledge and skills. MOE (2005) cited that the main challenge in most secondary schools in Africa is the accessibility of ICT infrastructures. Most of the countries have put a lot of effort into using ICT in the management

of schools. According to Albirini (2006), teachers in Tunisia have a positive attitude towards using ICT in education. They perceived ICT as a strong tool that can bring great improvement in the classroom. A study by Tibangye (2000) showed that in Uganda, school principals are using ICT facilities to assist in the management of schools. Management Information Systems (MIS) are used for financial functions such as payment systems, salary management systems, and fee tracking records to assist in managing the finances of the school. A study by Zibara (2009) pointed out that most schools in Uganda are utilizing ICT facilities in the management of finance.

In Kenya, public secondary schools are funded by the government through free secondary education funds. These funds are managed by school principals and the Board of Management (GOK, 2013). The BOM ensures effective utilization while the school principals are given the overall role of managing the finances (MOE, 2012). The school principals are charged with the responsibility of using the finances and preparing school budgets on how to spend the funds (TSC, 2007). The Kenyan government has tried hard to implement the use of ICT in schools by availing ICT infrastructure. The use of ICT in financial management can help in preparing payrolls, fee payment verification, and procurement. According to Ngui (2014), several schools have acquired ICT infrastructure, but few are using it to manage finances effectively.

According to Mue (2014), most public secondary schools have embraced ICT in financial management and it is mostly used in managing records of school fee payments and the preparation of payrolls. Though integration of ICT in schools has increased it is not yet known how effectively it is used to manage finances in Machakos County. Thus, this study examined the influence of principals' access to ICT infrastructure on financial management in public secondary schools in Machakos County

### **1.1 Problem Statement**

The government expects that all the schools be managed effectively and efficiently regardless of location, population, and catchment areas. This efficient management is facilitated by the effective use of ICT facilities within the school. The government of Kenya has tried hard to ensure that each public secondary school has ICT facilities that will be used to improve the standards of management. It is doubtful that these ICT facilities are used effectively in the management of school finance. Nevertheless, despite the increase of ICT facilities in public secondary schools all over the country, the school financial management level is below average in Machakos County as cases of financial mismanagement are common among schools in this county. This called for a need to investigate the influence of principals' access to ICT infrastructure on financial management in public secondary schools in Machakos County.

### **1.2 Research Objective**

To determine principals' access to ICT infrastructure and its influence on financial management in public secondary schools in Machakos county

## **2.0 LITERATURE REVIEW**

### **2.1 Theoretical Review**

#### **Technological Acceptance MODEL (TAM)**

This theory was developed by Fred Davis (1986). It explains more about the prediction and acceptability of an information system and indicates modifications that should be made to it to be accepted by the user. Davis points out that, for a system to be accepted by the user it must be;

- i Perceived usefulness. This is the extent to which one believes that the utilization of information systems will enhance performance.
- ii Perceived ease of use: The extent to which one believes that the system will be utilized with ease.

This model acknowledges that one's attitude towards the use of a system influences behavioural intentions which determine how one utilizes the information system. Davis argues that the ability of one to use a system is determined by attitude and the impact it has on performance. According to Davis (1986), perceived ease of use also influences the attitude of a person through, self-efficacy and instrumentality. Perceived ease of use is directly proportional to the user's efficacy. It is also instrumental in the sense that the users will use less effort and spare some effort to accomplish other tasks.

This theory applies to the study because the ability of a school to incorporate ICT in financial management mainly depends on school principals' perception of the technology. If the school principals perceive that ICT will be useful to their work and less effort will be needed, there is a high chance that they are going to use ICT effectively to do their financial management tasks and this will lead to enhanced performance. On the other hand, if the principal's perception of the technology is negative, they believe that it will be tiresome and cumbersome and will lead to low standards of performance there is a likelihood that they will not embrace it in their daily activities. Perhaps, this could be the reason why some of the school principals are still using manual methods to manage school finances.

## **2.2 Empirical Review**

In the 21<sup>st</sup> century, principals need to utilize ICT in the management of school finance. Principals' access to ICT infrastructure is crucial in schools. Successful implementation of ICT depends mainly on the availability of ICT infrastructure and the capabilities of principals to use it. Stair and Baldauf (2010) noted that principals who have access to computers tend to perform better than those without access. Lindasay (2006) sought to determine the extent to which teachers in Australia access ICT infrastructure. The result indicated that access to ICT infrastructure was not even among teachers. It varied depending on age and type of school. Teachers in private schools had more access than those in public schools. The study further revealed that teachers lacked adequate technical support hence they did not utilize ICT effectively.

Makhanu and Kampers (2012) in their study investigated the relationship between principals' access to ICT and school performance. The study focused on the accessibility and usage of ICT among principals and its impact on school performance. The findings revealed that 42% of school principals had access to basic ICT infrastructure and principal's access to ICT had a positive impact on school performance.

Jacobsey (2013) conducted a study on students' and teachers' access and application of ICT in teaching and learning and its impact on their motivation in urban and rural schools. The study revealed that teachers and students did not have adequate access to ICT infrastructure. Information and Communication Technology (ICT) was accessed differently in both types of schools. Those in urban schools accessed ICT better than those in rural schools. Information and communication technology (ICT) infrastructures had a positive impact on motivating students and teachers in schools. Another study by Uyouko, Wang, and Fauzi (2014) on ICT access among Nigerian teachers revealed that ICT infrastructures were inadequate though teachers believed that access to ICT infrastructure would facilitate effective teaching and learning.

### 3.0 METHODOLOGY

The study adopted a descriptive research design. The target population is constituted of 36 principals and 36 bursars from 36 public secondary schools in Kalama sub-county. Simple random sampling was used to select 33 participating schools. Purposive sampling was used to select 33 principals and 33 bursars from sampled schools. Questionnaires were administered to the principals while interview schedules were used to interview the bursars. Quantitative data collected from the principals through questionnaires was analyzed using percentages, means, standard deviation and frequencies while the qualitative data was coded and analysed iteratively along emerging themes. Chi-square test was used to determine the influence of independent variable on dependent variable.

### 4.0 RESULTS AND DISCUSSION

Access to Information Communication and Technology is a major factor in determining whether Principals can effectively use the technology in the management of finances within their institutions. To realize this objective, the principals were asked to identify the type of ICT technologies available in their schools. Their response to this statement is presented in Table 1.

**Table 1: ICT technologies available in Schools**

ICT TECHNOLOGY	FREQUENCY		FREQUENCY	
	YES	NO	YES	NO
Computer	31	2	93	6.0
Printer	32	1	97	3.0
Spreadsheets	28	5	84.8	15.2
Scanners	31	2	93.9	6.1
Word Processing	31	2	93.9	6.1
Photocopiers	28	5	84.8	15.2
School Telephones	33	0	100	0

From Table 1, it is apparent that most of the Principals within Machakos County have access to basic ICT technologies. Each Principal has access to a school telephone. The second most highly accessed technologies are printers at 97% followed by access to computers, scanners, and word processing equipment at 93%. The least accessible technology is the photocopiers which are only accessible to the 84.8% of the principals who participated in the study. This implied that principals in Machakos County had access to basic ICT infrastructures which they use for various financial management.

#### **Thematic analysis of principal's access to ICT infrastructure**

To obtain additional information about the issue of accessibility, the principals were asked to comment on the available ICT technologies in the school. The comments were varied and have been summarized as follows based on the recurrent themes. Respondent X reported that:

*“ICT technologies are shared resources which are shared by the teachers, students and whoever else wants to use them”* Respondent XX reported that: *“Sometimes ICT resources are*

*not easily available due to power shortages*". An interesting response was in relation to the usage. Respondent XXX reported that: *"the ICT equipment ate not commonly used"*

The findings imply that the probable reason for non-utilization of ICT infrastructure could be the issue related to power connection. In some rural schools, there is no electricity so ICT equipment cannot be used as required. The findings are in tandem with Lindasay (2006) who conducted a survey to determine the extent to which teachers in Australia access ICT infrastructure. The result indicated that access to ICT infrastructure was not even among teachers. It varied depending on age and type of school. Teachers in private schools had more access than those in public schools.

### Correlation Analysis

To determine the principals' access to ICT infrastructure and its influence on financial management in public secondary schools in Machakos County. A composite variable of Access to ICT infrastructure was computed by transforming ordinal data into nominal data to meet the assumptions of the chi-square test.

**Table 2: Chi-Square Tests**

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	90.60 0 <sup>a</sup>	56	.002
Likelihood Ratio	38.257	56	.966
Linear-by-Linear Association	11.731	1	.001
N of Valid Cases	32		

The findings from the Chi-Square Test reveal a statistically significant correlation between Access to ICT technologies and Management of finances ( $x = 0.002 < 0.005$ ). This implies that improvement in principals' access to ICT infrastructure is associated with a positive influence on financial management. The findings were consistent with those of Makhanu and Kampers (2012) which revealed that school principals had access to basic ICT infrastructure and principal's access to ICT had a positive impact on school performance.

### 5.0 CONCLUSION

The study concluded that principal's access to ICT infrastructure had a positive influence on financial management.

### 6.0 RECOMMENDATIONS

- i The government, through the Ministry of Education, may place more emphasis on enhancing wider access to ICT technologies.
- ii Principles should develop skills that can enable them utilize more functionalities of the available ICT technologies.

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