HUMAN RESOURCE INFORMATION SYSTEM STANDARDS AND PERFORMANCE OF PUBLIC UNIVERSITIES IN KENYA

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ABSTRACT

Organizations clearly recognize that human resource information systems improve HR efficiency and hence organizational performance. This has resulted in the increasing adaptability of these systems, but methods of quantifying their efficiency on performance are unknown. The study sought to examine the effect of human resource information system standards on performance of public universities in Kenya. The study used a descriptive research design comprising of qualitative and quantitative data. The target population comprised of 39 public universities in Kenya. The unit of observation comprised of 156 respondents comprised of management and subordinate staff. Primary data was collected using structured self-administered questionnaires. Reliability of the research instrument was ascertained using Cronbach Alpha. Validity was established using content and construct validity. Quantitative data was analyzed using descriptive and inferential statistics with aid of SPSS 26. Descriptive analysis used includes; frequencies, Mean, maximum, minimum, standard deviation and percentages while inferential analysis involved correlation analysis and linear regression analysis to test hypothesis at a significance level of 0.05. Regression analysis indicated that human resource information system standards had a statistically significant effect on performance of public universities in Kenya. The study concluded that human resources information system standards influence performance of public universities. The study recommends that managers of public universities should fully implement human resources information system standards in their institutions and encourage their employees to train and use it. The study further recommends increased budgetary allocation for ICT in public universities to fund development of more ICT infrastructure through acquisition of the right ICT tools and deployment of the right ICT skills through capacity building. Public universities should come up with clear policies on staff training so as to build capacities in workforces who are enabled though use of human resources information systems to improve performance.

Key Words: Human Resource, Information System Standards, Performance, Public Universities

INTRODUCTION

In the last few years, the software industry has produced several products that organize the various human resource information systems into integrated software referred to as human resource information system or HRIS, software. In general, the computerization of HRIS has resulted in an integrated database of human resource files like position files, employee files, job analysis and design files and many other human resource files are constructed in a coordinated manner using database management systems software so that application programs can produce reports from any or all of the files. Human resource information system is established to enable the information system in taking procedures and policies used to manage the firm‟s human capital as well as the procedure required to operate the computer hardware and software applications. For the employees, human resource information system provides the possibility of independent access to data, which often means working in one software window as well as keeps automatic tracking and reminder to business obligations and events. In some organizations HRIS lets the employees attend internal training courses via the web in order to develop their personal skills and knowledge. As a result, it encourages employees to make decisions and initiatives on the basis of information obtained in the human resource information system (Buckley et al., 2004).

To enhance the managerial decision-making process, it is considered indispensable to ensure that well-timed, relevant, and accurate information is made available to decision-makers (Laudon & Laudon, 2014; Nhari, 2017). Data provided by the HRIS in the organization should be detailed and clear. Almamary et al. (2014) agree that proper management of IS refines information quality and consequently improves the process of decision-making. HRIS has improved HR ability to disseminate information and provided increased levels of useful information. Therefore, proficient management of data is central to the firm's

business strategy. Bocij, Greasley and Hickie (2015) agree that data is extremely important in modern businesses.

New employees need to be trained on how to enter data into the system to avoid feeding it with inaccurate data into the system (Blatchford & Gash, 2012; Azemi, Zaidi & Hussin, 2017). The output of information systems should meet the criteria of quality, to enhance the decision-making process (Karanja & Wairimu, 2016). An HRIS enhances better analysis leading to more effective decision making. Through HRIS, more relevant information has become available for in quick decision-making. HRIS facilitates quick and accurate information on HR issues, which in turn enables managers to make informed decisions. HRIS gives holistic information about organizational operations, which can be shared among the different departments within the organizations. Delone and McLean 1992 as quoted by (Jaafreh, 2017) agree that information quality is the anticipated feature of the management information system outputs.

Characteristics of quality of information can be evaluated and congregated into classifications of time, content, and form (Jaafreh, 2017). The HRIS in the organisation should provide timely, clear and accurate information. Data in the human resource information system must be sufficient, detailed, relevant and complete to avoid inconsistencies, covers adequate time period and should updated regularly. Information provided by HRIS is relevant and facilitates quick and accurate retrieval of information on HR issues, which in turn enables managers to make informed decisions. HRIS facilitates an extensive HR database for a wide range of employee information.

Globalization has greatly contributed to the frontiers of human resources (HR) expansion of prospects, perspectives and use of information technology. According to Trivena and Silintowe (2019), the world's rapid advancement of science and technology has prompted rapid automation of human resource tasks of HRIS. Hence, helping many businesses shift from the usage of manual

information documentation to the new information storage system of digital devices. Kolatshi (2017) posits that, significant change in information management has pushed transformation for most organizations, whereby human resource operations have been automated so as to cope with faster speed. Kemei (2016) notes that, more companies are able to manage their HR effectively since they have become globalized thus creating the need for integrated systems through information technology (IT). Use of technology has increased globally, and HR management techniques are continuously evolving amongst CEOs, managers, and workers (Schäffner 2020). Between the 1960s and 1980s, HR were incorporated into the main company goal, and there was a major increase in policy and regulatory reporting obligations for workers (Kaygusuz, Akgemci and Yilmaz 2016). According to Armstrong (2019), during this time, HRIS was computerized and well-established in size and breadth, but basic record-keeping methods survived.

In the last 20 years, there has been a high demand for university education in Kenya which was necessitated by the increased number of high school graduates and working class students (Nyerere, Gravenir & Mse, 2012). The expansion in Kenya's university education can be understood within the framework of the country's education system and the general demand for education at all levels due to high population growth. Since the mid-1980s, there has been significant expansion of Public Universities in Kenya in response to higher demand for university education. The Universities Act 2012 sets up, The Commission of University Education to plan for the establishment and development of higher education and training; The University Funding Board, to coordinate financing of universities.

The Kenya Universities and Colleges Central Placement Service, to handle admissions to public universities and colleges; and The Technical and Vocational Education Funding Board (Education Survey, 2008). According to the Commission of University Education (CUE), by November 2017

there were 31 state sponsored universities with six constituent colleges, 18 private sponsored universities with five constituent colleges, and 14 universities functioning with letters of interim authority (CUE, 2017). However, even with this increased number of institutions of higher education it is still not enough to cater for the increased demand for education. This is because Kenyan institutions of higher education have not expanded at the same rate to match this demand hence further widening the educational access gap. Although the importance of HRIS in the management of HR is evident due to the benefits accrued to the organization, management and employee, it is an area that is under-researched in Kenya (Muriithi et al., 2014).

Statement of the Problem

The effective implementation of HRIS requires re-engineering of business processes. It is very important to view the implementation of HRIS as a whole to ensure system integrity. However according to the 2013 Presidential Parastatal Reforms Report, there was a significant decline in the performance of state corporations, as evidenced by their financial reports, which highlighted 21%, 23%, and 24% declines in performance in 2011/2012, 2010/2011, and 2008/2009 respectively (Kaaria, 2022). Studies by Mose (2017) and Murithi (2016) also affirmed that CSCs in Kenya have been performing abysmally due to ineffective leadership, governance, and management practices. Other signs of underperformance included dwindling levels of employee satisfaction, a performance management charter that was inappropriately linking individual performance to institutional performance as well as State Corporations' performance to national development goals, along with the institution's ability to recruit, invite, and retain skill sets necessary to drive performance (RPR, 2013; Kabiru, Theuri & Misiko, 2018).

Objectives of the Study

The objective of the study was to examine the effect of Human Resource Information System

Standards on performance of public universities in Kenya.

Research Hypothesis

H_0: Human Resource Information System Standards has no significant effect on Performance of Public Universities in Kenya.

LITERATURE REVIEW

Theoretical Review

This study was founded on theory of Diffusion of Innovation

Diffusion of Innovation Theory

The 1960s marked the beginning of the Diffusion of Innovations Theory (DOI). The DOI, which describes how technology and novel ideas proliferate and why, was created by Everett Rogers (Rogers, 2003; Oliveria and Martins, 2010). Rodgers' first recommendations for explanation of the occurrence of social change were highlighted by McGuire and Scott (2017). Due to the development and advancement of DOI theory, his explanations and proposals have undergone several revisions and extensions (Murray, 2009). The machinery that enables new ideas, like HRIS, to be accepted and used, increasing productivity, is analyzed and illustrated by the DOI. The management and staff of any given organization's resistance to change may obstruct the diffusion of innovation, delaying the adoption of numerous inventions (Murray, 2009; McGuire and Scott, 2017).
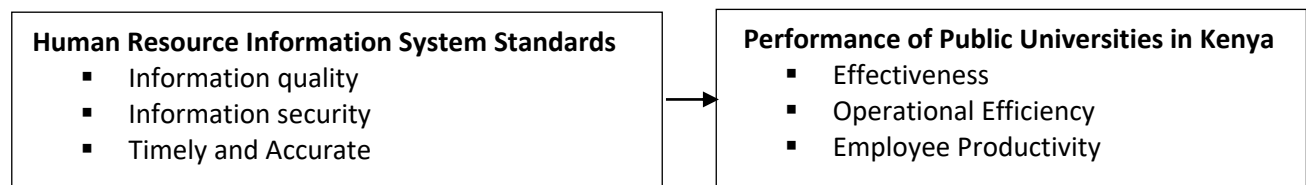
The decision's kind is determined by a number of elements, including whether it should be made at the discretion of the decision-maker and carried out voluntarily (Rogers, 2003; Tomana *et al.,* 2018). Accessibility, integrity, consistency, accuracy, completeness, and timely information are just a few of the aspects of information quality that help modern enterprises throughout the world improve their decision-making processes (Gharib, Giorgin & Mylopoulos, 2016). To successfully complete the decision-making process, the outputs from the information systems must satisfy the quality requirements. Data warehouses should therefore contain accurate information that is combined from a variety of operational databases. This ensures that high-quality information is made available throughout the organization for management's scrutiny and decision-making (Yeung & Brockbank, 2015; Azemi, Zaidi & Hussin, 2017). The third objective which is, the information Standards and principles (Quality) variable is supported by this theory. As it affects the acceptance and usage of ICT in many, if not all, institutions in the public and private sectors of all governments or countries internationally, the DOI Theory continues to link the variable of information standards to HRIS. Consequently, in order to accomplish this, systems validity and openness are essential (Warui, Mukulu, & Karanja, 2015).

Conceptual Framework

Human Resource Information System Standards	Performance of Public Universities in Kenya
▪ Information quality ▪ Information security ▪ Timely and Accurate	▪ Effectiveness ▪ Operational Efficiency ▪ Employee Productivity
Independent Variable	Dependent Variable

Figure 1: Conceptual Framework

Empirical literature

Different scholars have done studies that addressed various aspects of HRIS and performance in organizations:

HRIS Standards and Performance

Warui (2016), did a research study on the determinants of human resource information systems used in the teachers' service commission's operations in Kenya, which found out that IT infrastructure had a converse/contrary outcome on

utilization of HRIS in the processes and overall procedures of TSC. Inadequate IT amenities as well as insufficient integrated and networked facilities, affected acceptance and utilization of HRIS. The outcomes this study showed that the inadequacy or inaccessibility of working tools and monetary resources for sustaining HRIS was a major impediment in its maintenance and sustainability and lack of enough computers together with recurrent and numerous letdowns by the system owing to frail servers that required urgent upgrading as well. The findings also established that the organizational structure extensively affected HRIS utilization in TSC operations. The study also showed that more weight was put in refining the prevailing procedures than innovativeness and creativity mainly due to stringent controls by the management.

Kemei (2019) study on the influence of HRIS utilisation on employee performance in private universities in Kenya, a case study of USIU-Africa concluded that when the HRIS component function is optimal, employee performance is significantly improved. Employee performance is enhanced when the HRIS self-service portal is easily accessible. HRIS improves the human resource records management and communication of information within the organisation. He recommends more investment in database storage to equip managers to make better strategic decisions. Adoption of the system should be a priority, thus leading to the fulfilment of organisation requirements and the commitment of the employee to organisation goals.

Altarawneh (2019) looked at the perceived benefits and barriers in a study on the implementation of HRIS in Jordanian universities. He established that HRIS in Jordanian universities was adopted for HRM activities automation in order to obtain some general administrative routine purposes. The system was reported to give faster response and reliable information access. However, the system was subjected to financial constraints; ever-changing organisation's culture that failed to

accommodate the change and top managers lack of commitment.

METHODOLOGY

Research Design: A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose (Kothari & Garg, 2014). The researcher adopted descriptive research design in this study.

Population of the Study: Populations denote the collection of all things from which a sample is drawn to reflect certain distinguishing traits (Corbin, 2018). Zikmund et *al.,* (2013) define a population as all items in any field of inquiry, also known as the universe.

Census: For this study, census approach was adopted since the population is small (Yin, 2015).

Sampling Frame: The sampling frame for the study consisted of list of public universities in Kenya numbering to thirty nine (39) (CUE, 2022).

Data Collection Methods: The study collected primary data though a self-administered semi structured questionnaire from the respondents.

Validity Test: Content and construct validity of the research instrument was ensured through extensive literature review and consultation with the subject experts and the supervisor.

Reliability Test: A reliability test was applied to measure the instrument's internal consistency based on Cronbach's alpha coefficient (α) which is commonly used test of internal reliability (Cronbach, 1951). The Cronbach's Alpha coefficient values of 0.70 or above was considered to be acceptable

Data Processing and Analysis: Data was analyzed using descriptive and inferential statistics with the aid of Statistical package for Social Sciences (SPSS) Version 26.0. Descriptive approach describes and interprets what is being researched and establishes the relationship that exists (Mugenda & Mugenda, 2011). Inferential statistics was used correlation and

regression analysis to measure the relationship between dependent and independent variables. The results were presented in tables and figures.

Linear Regression Model: A linear regression analysis model was used to determine the linkage between the independent variable and the dependent variable:

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon \ldots\ldots\ldots\ldots\text{Equation 1}$$

Where;

Y represents Performance of public universities (Dependent variable),

X_1 represents, Human Resource Information System Standards,

β_0, Represent constant

β_1, Represenst coefficients to be estimated,

ε is a Stochastic Error term.

FINDINGS AND DISCUSSION

Reliability Test Results

The study employed Cronbach's Alpha coefficient analysis to assess reliability of this scale; a coefficient of 0.7 was adopted as the minimum threshold to access the sufficiency of the reliability of the study scale (Kendell & Jablensky, 2003). Summary results for reliability test were as indicated in Table 1.

Table 1: Reliability Test Results

Variable	No of Items	Items deleted	Cronbach Alpha	Reliable
HRIS Standards	7	0	0.909	Accepted

The results as indicated in Table 1, clearly shows that Cronbach alpha coefficients for the variable was above the minimum threshold of 0.7 hence the research instrument was reliable.

Descriptive Statistics

The study sought to interrogate whether there is a relationship between information standards and performance of public universities.

Human Resource Information System Standards

The objective of this study was to examine the effect of Human Resource Information System Standards on Performance of Public Universities in Kenya. The response from the respondents was as shown in Table 2.

Table 2: Descriptive Analysis for HRIS Standards:

1-Strongly Disagree, 2-Disagree, fairly agree, 4-Agree, 5-Strongly Agree.

HR Information Standards	5	4	3	2	1	Min	Max	Mean	SD
The organization has basic IT infrastructure to conduct HR operations	33.5	42.9	2.6	13.1	7.9	1	5	3.8	1.3
Data provided by the HRIS in this organization is accurate	5.2	45	15.7	28.8	5.2	1	5	3.2	1.1
HRIS in this organization is compatible with others system applications systems	27.7	53.9	7.9	7.3	3.1	1	5	4.0	1.0
The organization has enough security measures to prevent loss of information	31.4	46.1	8.9	11	2.6	1	5	3.9	1.0
HRIS has improved HR staff ability to disseminate increased levels of useful information	42.9	44	2.6	5.2	5.2	1	5	4.1	1.1
Through HRIS, more relevant information has become available for decision-making	44.5	39.3	7.3	6.3	2.6	1	5	4.2	1.0
HRIS helps employees to learn within the organization and this helps in sustaining performance	42.9	28.8	17.8	6.8	3.7	1	5	4.01	1.103

Valid N=98

From Table 2, 7.9 percent of the respondents strongly disagreed and further 13.1 percent disagreed that the organization has basic information technology infrastructure in place to conduct HR operations. On the other hand, 2.6 percent fairly disagreed, 42.9 percent agreed while 33.5 percent strongly agreed on the same assertion with a mean of 3.8 and standard deviation of 1.3. This implies that, the organization had embraced information technology for its HR operations. These findings agree with that of Normalini, Kassim, and Kurnia (2012) agree that IT infrastructure can also be a set of firm wide services budgeted by management and comprising both human and technical capabilities.

These findings agreed with that of Mukulu, Karanja and Warui (2015) who argued that insufficient IT facilities as well as inadequate networked facilities affected acceptance and application of HRIS. Similarly, Katunzi (2017) found the importance of having the appropriate standards before the implementation of HRIS. Moreover, 5.2 percent of the respondents strongly disagreed and further 28.8 percent disagreed that data provided by the HRIS in this organization is accurate. On the other hand, 15.7 percent fairly disagreed, 45 percent agreed while 5.2 percent strongly agreed on the same assertion with a mean of 3.2 and standard deviation of 1.1. This implies that the organization was using accurate HRIS data.

Inferential Analysis

In this section, the study infers the sample findings to the study population through correlation analysis and linear regression analysis and the findings are as shown below.

Correlation Analysis

Correlation analysis is used to determine the strength and direction of the relationship the relationship between Information Standards and Performance of public universities in Kenya. The findings are shown in Table 3.

Table 3: Correlation Summary Matrix

		EP	ID	ST	ISP	IS
ISP: HRIS	Pearson Correlation	.749**	.592*	.525**	1	
Standards	P-value	.000	.000	.000		

Valid N=98

According to Table 3, there was a positive and strong relationship between HRIS Standards and performance (r= 0.749, p-value= 0.000< 0.05). these findings are supported by the findings of Snicker (2013), Margatama (2017) and Mugo (2017) who equally established a positive relationship between information standards and performance.

Regression Analysis

The study used the linear regression analysis to assess the relationship between information standards and performance. The findings are shown in Table 4.

Table 4: HRIS Standards and Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.749a	.561	.559	.65880

a. Predictors: (Constant), HRIS Standards

b. Dependent Variable: Performance

ANOVA Results

The ANOVA test results from Table 5 shows an F (1,190) =241.715, P = 0.000< 0.05; an indication that the Simple Linear Regression model was a good fit to the dataset. The results indicate that the significance of the F is 0.00 which is less than 0.05, this, therefore, implies that the regression model statistically significantly predicts the outcome

variable and is, therefore, a good fit for the data. This is an indication that there exists a significant relationship between information standards and principles and performance. Bocij, Greasley & Hickie (2015) found that business information systems help to improve customer satisfaction through reducing errors by better programming and testing practices.

Table 5: Information Standards and Performance Model ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	104.909	1	104.909	241.715	.000b
Residual	82.030	97	.434		
Total	186.939	98			

a. Dependent Variable: performance

b. Predictors: (Constant), HRIS Standards

Model Coefficients

The regression Coefficient results showed that β= 1.240, t =15.547, p=0.000< 0.05; hence Human Resource Information Standards had a statistically significant influence on the performance in public universities in Kenya. Information standards had a positive standardized beta coefficient = 1.240 as shown in the coefficients results of Table 6. This implies that a unit improvement in the information standards and principles was likely to result to an improvement in the performance of public universities in Kenya by 1.240 units.

Table 6: Information Standards and Performance Model Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
Model	β	Std. Error	Beta	T	Sig.
1 (Constant)	-1.320	.313		-4.212	.000
HRIS Standards	1.240	.080	.749	15.547	.000

a. Dependent Variable: Performance

b. Predictors: (Constant), HRIS Standards

Below is the fitted linear regression model.

Performance of Public Universities = -1.320 + 1.240 HRIS Standards

Summary of Hypothesis Tested

This study tested the hypothesis that: **H_{01}: HRIS Standards has no significant effect on Performance of Public Universities in Kenya.**

The results in Table 6 indicated that there is a positive and significant correlation between HRIS Standards and Performance (r=0.749, p=0.000).

Simple linear regression indicated there is direct significant influence of HRIS Standards on performance as it significantly accounted for 56.1% in variation. Therefore, there is sufficient evidence to reject the null hypothesis and accept that for each increase in HRIS Standards, there is 1.240 units increase in Performance of public universities in Kenya.

Table 7: Results of the Hypothesis Tests

S/No	Hypothesis	Decision
H_{01}	HRIS information Standards has no significant effect on Performance of Public Universities in Kenya.	Reject H_{01}

Summary of Major Findings

The study aimed at investigating the relationship between information standards and performance of public Universities in Kenya.

Relationship between HRIS Standards and Performance

The objective of the study was to examine the effect of Human Resource Information System Standards on performance of Public Universities in Kenya. Averagely, the level of HRIS Standards in the Public Universities in Kenya was indicated by an average mean of 3.88. An implication that through HRIS Standards, more relevant information had become available for decision-making. The correlation analysis results revealed that, information quality and organization performance of Public Universities in Kenya had a significant relationship. Regression results further revealed that, a unit improvement in the HRIS Standards was likely to result to an improvement in Performance of public universities in Kenya.

CONCLUSIONS AND RECOMMENDATIONS

The study also sought to assess the effect of Human Resource Information System Standards on Performance of Public Universities in Kenya. The quality of information output is strongly associated with technical and service aspects of the system, that is, HRIS quality. High quality of the system leads to decision makers' satisfaction and also exhibits significantly positive influence on user satisfaction. The software and hardware can be standardized to suit organizational needs. The study concluded that high quality of the system culminates to high quality of the information given the fact that HRIS standard/quality had a significant effect on performance of Public Universities in Kenya. The linear regression model results revealed that the p-value of the coefficient estimate was less than 0.05 thus the null hypothesis was rejected and a conclusion drawn that Human Resource Information System Standards have a significant effect on Performance of Public Universities in Kenya.

Based on the findings of this study the following recommendations were proposed in relation to study objective;

The study recommended that, the top management should invest in HRIS infrastructure that is functional, compatible with other information systems, and can be utilized easily by employees with their current skills. Thus, the study recommends that Public Universities should have basic information technology infrastructure in place to conduct HR operations for improvement of the overall employee performance. Additionally, HRIS infrastructure should be efficiently managed to facilitate effective service delivery. The managers should make efforts to implement effective information security measures to prevent loss of information. Further, Public Universities should direct more resources into it to enhance employee performance through provision of software and hardware that are standardized to suit organization needs.

Areas for Further Research

The study focused on Human Resource Information System Standards as a factor influencing performance of public universities in Kenya. The study variable did not exhaustively explain its influence on performance leaving a room for further studies. This study was confined in public universities in Kenya hence limiting the generalizability of the findings to other categories of private universities. The study recommends a similar study to explore these findings in different environments to further validate the findings. Future research should test it in other settings and for instance to address the problem of employee performance in the private sector organizations. The study ignored the influence of other specific dimensions of human capital on the relationship between public universities and performance. The study was based on a cross-sectional study or analysis. Future research on Kenya's public universities can make use of different constructs for information systems adopted in the management of human resources. Future research studies can

include additional human resource practitioners in firms as respondents. In order to support theoretical viewpoints and determine the degree to which the results may be applied to other higher learning institutions, it can be useful to conduct a longitudinal survey of these aspects. Furthermore, the study is significant in that it adds to existing literature and may guide people on the importance of new technology use in offices and lectures so as to adjust to the new trend in technology.

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