

# HUMAN RESOURCE INFORMATION SYSTEMS AND EMPLOYEE PERFORMANCE IN NATIONAL POLYTECHNICS IN KENYA

Doris Mogotu Manyura<sup>1\*</sup>, Dr. Elizabeth Nambuswa Makokha<sup>1,2</sup>

- <sup>1</sup>. College of Human Resource Development, Department of Entrepreneurship, procurement, leadership and management. Jomo Kenyatta University of Agriculture and Technology, P.O. Box 62000 - 00200, Nairobi Kenya
- <sup>2</sup>. College of Human Resource Development, Department of Entrepreneurship, procurement, leadership and management. Jomo Kenyatta University of Agriculture and Technology, P.O. Box 62000 - 00200, Nairobi Kenya

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**Abstract:** The Human Resource Information System is a technological concept which utilizes the information technology for effective performance of the human resources, its functions and applications in an organization. The study focused on human resource information systems and employee performance in National Polytechnics in Kenya. The study was necessitated by the fact that despite the TVET institutions having the HRIS modules, there has not been a study to show on how these modules enhance employee performance. The study therefore aimed to explore the effect of e-recruitment systems on employee performance in National Polytechnics in Kenya. The theories and models underpinning the study included technology acceptance model the systems theory and human resource information system model. The study employed a cross sectional survey design which was census technique targeting 61 respondents and purposive sampling was used to select the 61 respondents who are mainly in Human resource managers and the employees in the human resource department. Semi structured questionnaires were used as a data collection tool to gather both qualitative and quantitative data. The validity and reliability of the instrument was determined by use of Cronbach alpha. According to the results, e-recruitment as a variable had a significant effect on employee performance in National polytechnics in Rift Valley region, Kenya. The study recommends that the national polytechnics should embrace E-recruitment to enable them forecasting organizational staffing needs in collecting and processing data about applicants and in development of interview schedules and relevant interview tasks for new employees as well as deciding when to hire.

**Keywords:** E-Recruitment, employee performance.

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## 1. INTRODUCTION

Human Resource (HR) has various definitions put up by various scholars. HRM can be explained as a system entailing different strategies and undertakings that focuses on managing employees at all levels of a company with main aim of attaining organizational goals in a more effective way. Authors defined HRM as the practice of managing issues of employment within an organization. (Ansar & Baloch, 2018) gave a further explanation of HRM in the western perspective as all those integrated strategies and activities comprising of the performance of human assets and related functions for the

accomplishment of the firm's mission, vision and policies. Particularly, the definition of HRM as per (Ansar & Baloch, 2018) intended to address issues relating to: performance, staffing, administration and change performance. Mostly, human resources and HR professionals are supposed to work towards achieving organizational objectives thus HRM referring to the entire process of managing human resource talent to achieve the goals of an organization.

Human Resource Information System (HRIS) is a soft-ware or online solution that is used for data entry, data tracking and the data information requirements of an organization's human resources (HR) performance, payroll and bookkeeping operations. HRIS is an information system or managed service that provides a single, centralized view of the data that a human resource performance (HRM) or human capital performance (HCM) group requires for completing human resource processes such as recruitment, placement, payroll performance and other human resource practices (Berdik et al., 2017). In most situations, human resource information systems may also lead to increases in efficiency when it comes to making decisions in HR and as a result enabling the HR practitioners to obtain many hours of his or her day back instead of spending these hours dealing with non-strategic, mundane tasks required to run the administrative-side of HR. The decisions made will also increase quality and as a result, the productivity of both employees and managers will increase and become more effective (Kaydos, 2020). An efficient HRIS provides: administration of all staff data, reporting and evaluation of staff data, company-related records, including staff handbooks, recommendations, and rewards performance, such as enrollment, status modifications and updating of personal data.

Information technology is changing the way HR departments handle record keeping and information sharing. It decreases the paperwork substantially and allows easy access to voluminous data. The processing and transmission of digitalized HR information are called Electronic Human Resource Performance (Fenech et al., 2019). EHRM is a "way of implementing HR strategies, policies and practices in organizations through conscious and directed support of and with the full use of web-technology based channels" (Al-Harazneh & Sila, 2021).

The understanding of HRIS can be traced to western-based cultures and companies and neither of them can actually be mainly implemented in the higher educational environment of different nations due to cultural and perception differences. With regard to MENA countries, it was also propagated in theory, but in practice may lead to challenges in the traditions, principles and mentality of Middle Eastern countries. Human resource performance is a vital concept for any organization, as it is a main factor in accomplishing a competitive advantage (Elrehail et al., 2019). The most common type is strategic human resource performance which has underpinning strategic approach on human resource activities. This sub-section of HRM has become an important topic for research. Iqbal (2018) indicated that strategic HRM helps in the understanding of the relationship between strategy, HRM, human resource and organization's performance. The major view of HRM practices is on the streamlining of the human capital of an organization for its success. Workers are an important and crucial part of the organization's performance (Verma et al., 2021). In higher learning institutions, such as universities, human capital was also referred to as the firm's intelligent capital. They improved the collective value to institutions and businesses by their skills, abilities, knowledge and life experiences, together with inspiration for the improvement of these firms (Verma et al., 2021).

Organization worldwide has taken various initiatives to increase firm performance through investment in information and Communication Technologies (ICT) with a view to transforming performance practices and to increase the efficiency of the organization. As Web technologies matured and organizations enthusiastically adopted them, more and more of the HRM functions got Web-enabled. HRIS essentially transfers HRM functions to employees and managers (Udekwe et al., 2021). They access these functions over a web interface, typically over a corporate intranet. e-HRM can range widely in scope; at the low end, it can be a simple web-based system to access Human Resource (HR) related documents (Sagum, 2015). At the high-end e-HRM is a fully integrated, organization-wide electronic network of HRM-related data, information, services, databases, tools, applications, and transactions that are generally accessible at any time by the employees, managers, and HRM professionals (Maddulapalli & Dudekula n.d).

Organizations worldwide have recognized the increasing importance of IT for leveraging human resource performance function, thereby leading to the adoption of HRIS (Udekwe et al., 2021). Information and Communication Technologies (ICT) enable innovative ways of carrying on routine organizational tasks via the power of the virtual work environment. In global eyes, advanced e-HRM systems typically include Enterprise Resource Planning (ERP) systems, HRM service

centers, manager and employee portals and web applications. The empowerment of managers and employees to perform certain chosen HR functions relieves the HR department of these tasks, allowing HR staff to focus less on the operational and more on the strategic elements of HR, and allowing organizations to lower HR department staffing levels as the administrative burden is lightened (Manzoor et al., 2019). It also helps the organizations to upgrade the HR functions to web-based technology and speed up the flow and implementation of business strategies and processes.

There have been a number of studies on HRIS, while some of them have focused on kind of applications that dominate in HRIS, others have focused on the organizational adoption of HRIS. Generally, these studies can be classified by their regional and functional focus. Regarding on the regional focus, the majority of these studies are implemented in developed countries such as United State of America and European countries (Salvia et al., 2019). Most studies of “HRIS” implementation being based on cases in Europe and the USA in spite of the cultural challenges and complexity, but they show some uniformity. While relatively few cases have been investigated outside of the most developed countries, such as in Jordan. These geographical locations show strikingly different cultural considerations. Electronic human resource performance in Jordan is in its initial stages of adoption which leads to changes taking place in the information Technology landscape (Zhou et al., 2022).

The global HRIS can put numerous multinational employees’ data to strategic use and updating the global database is automatically by using the local databases. The global HRIS can be applied in planning and budgeting for employee training and development, interview tasks and assignments and performance succession planning (Scupola & Pollich, 2019). The multinational organizations with a global HRIS depict abilities of quickly and easily obtaining the right employees to fill specific vacant positions. Having the ability to recruit best qualified workers offers competitiveness to the firm. For example, an organization like Colgate Palmolive global has a HRIS with information concerning each manager’s experiences, skills and abilities regarding different cultures.

The HRIS provides an avenue for compensation globally by providing different compensation for same positions in different countries. The system provides an avenue of reviewing compensation plans based on local currencies and languages. For instance, Cadbury Schweppes Ltd global HRIS provides the general-managers with an online compensation framework having approximately 22 complete direct and indirect compensation reports. The system also is able to capture the local and global annual budgets and expenditures thus advocating for rooting Global HRIS in the global business strategies. The global HRIS contains understandable spreadsheets with the ability to perform sophisticated calculations more easily thus having a positive impact on businesses. Globally, there are few studies done on HRIS in learning institutions, more so the TVET institutions. Therefore, there is need for such studies to add on the global body of knowledge

Studies in Africa have indicated the adoption of certain functional subset of HRIS, such as e-recruitment, e-staffing and e-training. Africa countries have embraced technology since the 1960s. Most of the countries have been able to embrace HRIS just like the rest of the world with an aim to manage the human resources. According to Kiwango and Omar (2021) the HR function in most of the Africa states has been embracing the use of HRIS technology to provide integrated communication system effectively slowly unlike in other areas such as Europe and America. The human resource functions in Africa should be able to utilize available information and communication technology to transform human resource internal operations.

African organizations have adopted the best practices of e-HRM such as electronic selection, recruitment, learning, training and performance, compensation, employee profiling and career planning. e-HRM has been formulated aiming at maximizing the efficiency of the HR function in smoothening the procedures, reducing high recruitment costs, minimizing unnecessary administrative constraints and having organizations pursuing a strategic role (Sungwa, 2021). Evidence from a survey carried out by CRANET reveal that most African companies have adopted Lepak and Snell’s three level model. The three level models suggest that operational e-HRM level is the first one. HR planning systems that include salary administration and personnel profile administration. The relational e-HRM is the second level that provides HR tools that aid in electronic selection, recruitment, training, employee performance appraisal and reward performance. The third level, the transformational e-HRM covers issues of strategic in nature. This level entails all activities tailor made to support and promote organizational change processes. This mainly involves strategic change, strategic competence performance and organizational environment performance. Most organizations in Africa use knowledge systems, intranet and inner portals. Mabaso (2020) posit that the current Africa governments are advocating for the use of HRIS in public organizations as well as locating resources from the government to support the use of HRIS in various public institutions. The human resource managers are required to apply the intranet as a support tool for communication on issues of human resource activities

within the public organizations in Kenya, deliberate strides have been taken to get the country to some high technology levels. The Government sees ICT as a driver towards economic and social development (Toader, 2018), hence National ICT Policy. Human resource information systems have been put in place to introduce value driven competency based human resource performance practices. The human resource information systems implementation team for Capacity Kenya (CK) has championed the use of human resource information systems in Kenya since 2009.

In Kenya, HRIS is mostly used to keep information relating to all workers in an institution on issues relating to workers' qualifications, experiences, skills and experiences. Many organizations are embracing executing human resource functions like planning, recruitment, selection, staffing, orientation, training and compensation through online modules. E-training is becoming common on issues relating career and succession planning, individual development plans, appraisal systems monitoring skills profile in the organization. Organizations in the twenty first century are under the pressure of reducing cost of operations and the pressure of being responsive to the emerging employee performance trends. Breckenridge (2019) in their study of ICT in public organizations in Kenya, have confirmed that human resource information systems have been introduced across the Kenyan national polytechnics only recently. Although human resource information systems have gained popularity as a strategy for competitive advantage, little information exists on its effect on employee performance in national polytechnics. Even though a number of researches have been done to address the benefits in the introduction of human resource information systems, little investigation, instead, is evident to measure the effects of human resource information systems on service delivery of public institutions (Silva and Lima, 2018). In spite of the increasing functionality and affordability which allows for human resource information systems to be used extensively in the public service organizations of all sizes, limited research is available on assessment to establish whether disparities exist or the impact of human resource information systems in employee performance.

Further in the Kenyan context, various state corporations have been registering poor employee performance and the country's national polytechnics are not exceptional. An evaluation of implementation of human resource information systems carried out by Kavanagh, and Johnson (2020), expressed similar sentiments and contends that more evaluative research needs to be done to determine effects of human resource information systems in national polytechnics, hence need for this study. Therefore, the study sought to determine the effect of E-recruitment on employee performance in National polytechnics in Rift Valley region, Kenya.

## 2. EFFECTS OF E-RECRUITMENT ON EMPLOYEE PERFORMANCE

An organization applicant tracking system is able to track demographic information, as well as the skills and competence of applicants and those interviewed by the firm. The search major feature of applicant tracking systems could be screened out the qualified resumes based on certain established criteria, resulting in time saving for HR staff. Letters or e-mails can be automatically sent by the organization system to un-qualified applicants. The second major system is called a hiring performance system (HMS). The primary difference between this and the applicant tracking system is that the HMS utilizes job boards and corporate websites to establish a match from a pool of applicants. An e-mail is sent to the firm when the system receives a resume that clearly matches the recruiter's desired qualifications. This means a quicker interview, which truly reduces time to hire. The major prospects can receive an offer more quickly, so a talented applicant does not go to another company. Passive organization candidates are also reached through push technology, making them aware of vacancies that match their skills. Both types of systems provide similar functions, and the distinction among them is not so apparent. Indeed, the internet offers several and various major things: access, speed, precision, targeting ability, efficiency, cost and time effectiveness. A good recruiting system can be able to reduce the hiring time by two-thirds and lower costs by 90%. Undoubtedly, when compared with mostly newspaper ads, the internet offers very lower recruitment costs (Al-Harazneh & Sila, 2021).

Moreover, the firm's internet provides functionalities within the HRIS or specialist recruitment performance system (RMS). First of all, it assists in creating a vacancy, usually by transferring job data from the human resource module upon a position being shown as vacant, or potentially vacant. Secondly it is mainly possible to advertise the vacancy on the company's intranet or external web site, or via third-party recruitment sites. Furthermore a RMS enables the firm to perform the recording and administering of applications and the entire performance of the selection process, through workflows to route actions between managers, applicants and HR executives. A recruitment performance system has also specific functionalities for establishing medicals, references and contracts for preferred candidates. Completing the final employment of the successful individuals is mainly facilitated by the transferring of their complete details onto the HR

administration module via the starter process. Lastly a RMS can generate various types of reports, for instance, interview schedules, lists of positions currently being advertised and the possible vacant posts. Other more specialist resourcing applications may be established as part of the RMS or via third-party software, for instance, CV scanning and analysis and on-line psychometric testing for particular jobs. If a separate RMS is established, interface with the main HRIS may be needed, and also with the CRM if this is used to front-end resourcing for organization work control and reporting purposes. Software applications in organization mainly dealing with human resources and their skills, attitudes, and knowledge (such as e-learning systems, skills databases, e-recruitment modules, corporate modules integrated with competence-centered services, and functions) are often very much based on database technology (usually relational) for organizing, storing, and searching relevant information regarding the firm. This system has really assisted firms in e-staffing especially for large and complex organizations. The e-human resource planning systems had been able to provide staff profiles which made it easier for the firms to have succession planning and also contributing towards effective and efficient performance of work. This also leads to proper utilization of the employees resulting to a higher market share for the firm.

With the many benefits of HRIS in institutions, it can be said that many organizations, mostly from the developing countries, do not derive much benefits from the HRIS due to some reasons. The reasons come as challenges for fully adopting and implementing effective HRIS. The challenges relate to meeting workers' expectations (Khan et al., 2017), inadequate individualized interactions between HR officers and the employees in an organization, inadequate informational culture (Al-Dmour et al, 2017) and to elaborate an effective leadership change management approach (Khan et al., 2017). According to the study done by Al-Dmour (2017) the most significant barriers and issues hindering effective execution of HRIS include: reluctance on the side of top management, employee's privacy matters, internal resistance in organizations to implement HRIS, and the overall HRIS conversion cost that is moving from traditional approach to HRIS. It can be seen that, if the top management officers initiate the change process as well as employees take it positively to change for any reasons, the adoption of HRIS can easily be implemented by more than 78% in most of the organizations. Inadequate technological knowledge makes it difficult to maintain HRIS as well as shortage in IT experts contributes to the inefficiency of the system. Expert personnel should be availed to enhance implantation of the system without which the efforts tailored towards the adoption will be useless. Finally, Iwu et al (2021) posit that HRIS requires infrastructural development which is costly to many organizations. Maintenance cost makes it very expensive to most of the organizations thus a disadvantage to small and medium scale enterprises. Therefore, it is important to focus on benefits of implementing HRIS but it is also relatively important to focus on how to deal with barriers which bring about marginal costs. However, Pagliari (2022) note that all the marginal costs of implementing HRIS could be recovered by the marginal benefits.

Most of the previous related studies in human resource information systems were theoretical (Macke & Genari, 2019). In addition, all the revealed studies were conducted in the context of developed countries' organizations and sites. Boon, Hartog, and Lepak (2019) posit that our current understanding of human resource information systems characteristics is quite limited at present and there is therefore a necessity to suggest general insights. They suggest in their development of a general framework for human resource information systems. Agrawal and Parmar, (2020) in a survey of implementation of HRIS in the Kenyan banking sector argued that further research is required in the use and improvement of HRIS. Al-Hawari and Bandyopadhyay, (2021), in their survey of implementation and development of HRIS in Jordanian universities recommend further research in improvement of HRIS TVET institutions in developing countries.

Fashoto et al. (2018), in an evaluative survey to strengthen human resource information systems in Swaziland, Uganda and Rwanda suggest that future studies should be geared towards monitoring and evaluation of HRIS to advance the strategic role of the human resource performance while at the same time strengthening the use of HRIS in Africa. Kavanagh and Johnson (2020), in a survey research of human resource information systems success assessment, using an integrative model expressed concern that there were overwhelming demands for useful measures for assessing the overall benefits of HRIS investment. There is lack of empirical research regarding integration between information system and human resource performance to improve organizational employee performance. There was therefore need for further research to address these gaps.

### 3. METHOD

The study adopted descriptive research design. The total population of 61 respondents comprising of Deputy Principal Administration, Registrar Administration, Human resource Officers and Head of Departments and from the two polytechnics was used in the study. The primary data was collected using questionnaires, which had structured (closed-ended) questions. Piloting

was to test the validity and reliability of the data collection instrument. The data was classified, operationalized, interpreted and analyzed to determine the effects of the HRIS components on the employee performance according to the study objectives. The analysis was Quantitative and qualitative in nature. The multivariant analysis was employed to provide the most useful statistics for the regression model.

#### 4. DISCUSSIONS

The first specific objective of the study was to determine the effect of E-recruitment on employee performance in National polytechnics in Rift Valley region, Kenya. The respondents were requested to indicate their level of agreement on statements relating to effect of E-recruitment on employee performance in National polytechnics in Rift Valley region, Kenya. A 5 point Likert scale was used where 1 symbolized strongly disagree, 2 symbolized disagree, 3 symbolized neutral, 4 symbolized agree and 5 symbolized strongly agree. The results were as presented in Table 4.2.

From the results, the respondents agreed that HRIS helps with forecasting organizational staffing needs. This is supported by a mean of 3.943 (std. dv = 0.981). In addition, as shown by a mean of 3.866 (std. dv = 0.850), the respondents agreed that The HRIS information generated helps collecting and processing data about applicants and in development of interview schedules and relevant interview tasks for new employees as well as deciding when to hire. Further, the respondents agreed that the HRIS helps in the processing of statistics concerning new employees and giving appropriate position description. This is shown by a mean of 3.731 (std. dv = 0.914).

The respondents also agreed that HRIS promotes effectiveness in the making of the recruitment budgets and enhances timeliness in the processing of human resource functions. This is shown by a mean of 3.696 (std. dv = 0.947). With a mean of 3.689 (std. dv = 0.856), the respondents agreed that E-recruitment enhances employee performance.

**Table 4.1: E-recruitment and Employee Performance**

	Mean	Std. Deviation
HRIS helps with forecasting organizational staffing needs	3.943	0.981
The HRIS information generated helps collecting and processing data about applicants and in development of interview schedules and relevant interview tasks for new employees as well as deciding when to hire	3.866	0.850
The HRIS helps in the processing of statistics concerning new employees and giving appropriate position description	3.731	0.914
HRIS promotes effectiveness in the making of the recruitment budgets and enhances timeliness in the processing of human resource functions	3.696	0.947
E-recruitment enhances employee performance	3.689	0.856
<b>Aggregate</b>	<b>3.788</b>	<b>0.873</b>

#### 4.1 Inferential Statistics

Inferential statistics in the current study focused on correlation and regression analysis. Correlation analysis was used to determine the strength of the relationship while regression analysis was used to determine the relationship between dependent variable (employee performance in National polytechnics in Rift Valley region, Kenya) and independent variables (E-recruitment).

##### 4.1.1 Correlation Analysis

The present study used Pearson correlation analysis to determine the strength of association between independent variables (E-recruitment) and the dependent variable (employee performance in National polytechnics in Rift Valley region, Kenya) dependent variable. Pearson correlation coefficient range between zero and one, where by the strength of association increase with increase in the value of the correlation coefficients. The current study employed Taylor (2018) correlation coefficient ratings where by 0.80 to 1.00 depicts a very strong relationship, 0.60 to 0.79 depicts strong, 0.40 to 0.59 depicts moderate, 0.20 to 0.39 depicts weak.

**Table 4.2: Correlation Coefficients**

		Employee performance	E-recruitment
Employee performance	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	55	
E-recruitment	Pearson Correlation	.851**	1
	Sig. (2-tailed)	.002	
	N	55	55

From the results, there was a very strong relationship between e-recruitment and employee performance in National polytechnics in Rift Valley region, Kenya ( $r = 0.851$ ,  $p$  value = 0.002). The relationship was significant since the  $p$  value 0.002 was less than 0.05 (significant level).

#### 4.1.2 Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables (E-recruitment) and the dependent variable (employee performance in National polytechnics in Rift Valley region, Kenya)

**Table 4.3: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.921	.848	.849	.10120

a. Predictors: (Constant), E-recruitment,

The model summary was used to explain the variation in the dependent variable that could be explained by the independent variables. The r-squared for the relationship between the independent variables and the dependent variable was 0.848. This implied that 84.8% of the variation in the dependent variable (employee performance in National polytechnics in Rift Valley region, Kenya) could be explained by independent variables (E-recruitment).

**Table 4.4: Analysis of Variance**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	12.027	4	3.018	97.35	.000 <sup>b</sup>
1 Residual	6.568	51	.031		
Total	18.595	55			

a. Dependent Variable: Employee Performance in National polytechnics in Rift Valley region, Kenya

b. Predictors: (Constant), E-recruitment

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 97.35 while the F critical was 2.412. The  $p$  value was 0.000. Since the F-calculated was greater than the F-critical and the  $p$  value 0.000 was less than 0.05, the model was considered as a good fit for the data. Therefore, the model can be used to predict the influence of E-recruitment on the employee performance in National polytechnics in Rift Valley region, Kenya.

**Table 4.5: Regression Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.205	0.038		5.395	0.000
	E-recruitment	0.369	0.099	0.367	3.727	0.004

**a Dependent Variable: Employee Performance**

The regression model was as follows:

$$Y = 0.205 + 0.369X_1$$

According to the results, e-recruitment has a significant effect on employee performance in National polytechnics in Rift Valley region, Kenya ( $\beta_1=0.369$ , p value= 0.004). The relationship was considered significant since the p value 0.004 was less than the significant level of 0.05.

## 5. CONCLUSIONS AND RECOMMENDATIONS

Based on the findings, the study concluded that According to the results, e-recruitment has a significant effect on employee performance in National polytechnics in Rift Valley region, Kenya ( $\beta_1=0.369$ , p value= 0.004). The relationship was considered significant since the p value 0.004 was less than the significant level of 0.05. The study came up with the following recommendations; The national polytechnics should embrace E-recruitment to enable them forecasting organizational staffing needs in collecting and processing data about applicants and in development of interview schedules and relevant interview tasks for new employees as well as deciding when to hire.

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