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## Human Resource Information Systems Usage and Competitiveness of Organisations: A Survey of Higher Learning Institutions in Tanzania

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### Abstract

This study mainly aimed to analyse the role of Human Resource Information Systems (HRIS) in driving organisational competitiveness of Higher Learning Institutions (HLIs) through improved human resource management (HRM). Specifically, it determined the influence of HRIS use on administrative costs, HR service delivery and HR innovation using data collected from HR managers and heads of academic and administrative departments or sections responsible for handling HR activities in the HLIs under review. Employing a quantitative survey, the study gathered data from purposively selected human resource and administrative officers in both public and private HLIs. The analysis of the data collected entailed the use of Partial Least Square Structural Equation Modelling (PLS-SEM). The results show that using HRIS reduces administrative costs, improves the quality of HR service delivery, and promotes innovation in HR service delivery. These results demonstrate that the investment and extensive use of HRIS can further enhance organisational competitiveness. This paper contributes innovatively to HRM literature by empirically demonstrating the potential benefits of HRIS in HLIs, particularly against the backdrop of scarce empirical studies that have specifically examined the direct impact of HRIS on organisational competitiveness in HLIs in the context of low-technology countries such as Tanzania.

**Keywords:** Human resources information systems, administrative costs, human resource innovation, human resource service delivery, higher learning institutions

<https://dx.doi.org/10.4314/udslj.v19i1.11>

### Introduction

Human resources (HR) constitute one of the most important aspects of any organisation, how many institutions manage them leaves much to be desired (Hu *et al.*, 2022). In the contemporary dynamic environment, still evolving advanced technologies increasingly help organisations maintain a competitive edge over their rivals. In fact, leveraging technological advancements enhances operational efficiency through expedited quality services and administrative cost reduction. Globally, information and communication technology (ICT) has become centripetal in efficient and effective HR service delivery (Bondarouk *et al.*, 2017). As a result, organisations are coming under mounting pressure to integrate human resource management (HRM) with information technology (Bilgic, 2020) to create an institutional win-win operational situation. In this regard, Gërguri-Rashiti *et al.*, (2017) argue that ICT can potentially boost innovation and efficiency in the management of organisations.



Information systems have, therefore, become the backbone of organisations seeking to gain a competitive advantage (Bansal *et al.*, 2023; Hossain *et al.*, 2022; Tallon *et al.*, 2022).

Human Resource Information Systems (HRIS), which are currently revolutionising HR operations, have emerged in recent years to be essential for organisations seeking to achieve their strategic goals (Waheed *et al.*, 2020). HRIS integrates HRM processes with ICT to provide an organisation with accurate and real-time information that managers can apply to make informed human resource decisions (Saleh & Saleh, 2016). These information management systems are integrated computer systems for collecting, storing, analysing, presenting, and disseminating information on an organization's human resources (Matimbwa & Masue, 2019). HRIS has changed how to execute HR in addition to enabling HR managers and professionals to provide accurate and timely information (Okonkwo, 2021). When properly deployed, HRIS can serve as a tool for improving HRM effectiveness and efficiency and its contribution to organisational competitiveness.

Because of its perceived potential, HRIS has, over the past three decades, attracted heightened interest not only from practitioners but also from researchers (da Silva *et al.*, 2022). For many years, the HR function has attracted criticism for failing to add value to the organisation's strategic performance (Bondarouk *et al.*, 2017). As such, HRIS has brought with it the much-needed transformation in HR processes and decision-making, which can contribute meaningfully to organisational competitiveness by trimming administrative costs, improving service delivery, and enhancing innovation capabilities (Bilgic, 2020; Moussa & El Arbi, 2020). Strategically, HRIS can facilitate HR planning by providing information on workforce trends and future organisational needs. Moreover, the analytics and reporting modules of HRIS can help managers determine skill requirements and gaps so that they can take appropriate corrective measures. Doing so makes the organisation well-prepared to counteract future challenges and exploit potential opportunities, hence becoming even much more competitive. In consequence, there has been a significant increase in the adoption and application of HRIS, which signifies its importance and the multiple benefits that technology can engender for the HR function.

### **The Research Problem**

Despite the increase in the adoption and the multifaceted benefits it can provide to organisations, the use of HRIS is overall reported to be comparatively low relative to other management information systems such as logistics, marketing, finance, and accounting management information systems (Priksat *et al.*, 2023; Zhou *et al.*, 2022). In developing countries such as Tanzania in sub-Saharan Africa, HRIS reportedly only applies to a limited number of applications such as payroll and records keeping (Cooke *et al.*, 2019; Mateng'e, 2022; Shah *et al.*, 2020). As a result, its impact on the HR decision-making process is hardly felt contrary to expectations. For example, the ineffective use of HRIS has resulted in problems such as having more doctors and engineers in administration than in places where their specialised services are needed the most (Mbamba, 2023). This affects the efficiency and competitiveness of the organisation. There are also contradictory results regarding the use of HRIS in the empirical literature (El Idrissi *et al.*, 2021).

Nevertheless, HRIS has much to offer in the developing country's context of, for example, Tanzania. To begin with, even though cost-saving constitutes one of the main motivating factors for organisations to adopt and apply HRIS, there is also evidence—contrary to expectations—that it could even escalate the cost (Waheed *et al.*, 2020). For instance, a study of HRIS usage and challenges in public organisations established that it was costly to sustain HRIS due to high installation and maintenance costs as well as delayed



maintenance, hence resulting from a shortage of expertise (Matimbwa & Masue, 2019). Therefore, as Waheed *et al.*, (2020) suggest, more empirical studies are required to understand fully the relationship between HRIS usage and envisaged organisational competitiveness. As such, this study focuses on the role of HRIS usage in engendering the competitiveness of Higher Learning Institutions (HLIs) in Tanzania, one of the under-researched contexts both in HRM and ICT literature.

Research on the use of HRIS and its impact on organisational competitiveness, especially in an African context, is scarce (Asha, 2022; ElNakib, 2022; Mkongo & Macha, 2022). The few studies available have largely focused on the sub-sets of HRIS, such as the payroll system and online recruitment systems, which paint only a fragmented picture of its impact on organisational competitiveness. More comprehensive analyses are necessary to provide a bigger and composite picture of how HRIS usage contributes to the strategic positioning of organisations. In this regard, the literature suggests that the adoption and use of HRIS may lead to an increase in the administrative costs of an organisation (Waheed *et al.*, 2020). The prevalence of this kind of information may deter managers from investing in HRIS for their organisations' efficiency and effectiveness. Most of the literature linking HRIS with organisational competitiveness is more conceptual in nature (Bondarouk *et al.*, 2017; Stone *et al.*, 2015). Yet, empirical studies confirming this claim are few in the HRM literature. In addition, it remains unclear how HRIS usage contributes significantly to organisational competitiveness. More empirical evidence, therefore, is necessary to guide managers of organisations on leveraging HRIS for sustainable competitive advantage. Scholars in the field of ICT and HRM are increasingly calling for more research to validate the claim that ICT can contribute to HRM's contribution to strategic performance of organisations (Bondarouk *et al.*, 2017; Bilgic, 2020; Ziebell *et al.*, 2019).

In a bid to overcome these limitations, this study analysed the predictive power of HRIS usage for organisational competitiveness using a sample of HR managers and HR professionals in both private and public HLIs in Tanzania. The HRIS use is relevant and critical for HLIs because today they operate not only in a dynamic but also a competitive business environment (Msuya, Sanga, & Dominic, 2023). Most HLIs incidentally have a large workforce, so they have big volumes of employee data to process and disseminate for decision-making. Conversely, such data volumes mean the institutions have to invest heavily in ICT infrastructure. Consequently, the rising employment rate in HLIs has implications for effective HRM. After all, HLIs constitute centres of knowledge creation and experimentation in diverse fields and are well poised to be equipped with modern technological facilities, including HRIS (Karanja *et al.*, 2018). Unlike in the past when HLIs in Tanzania were mostly owned by the government, they now operate under competitive conditions in both factor and product markets, conditions that require them to act strategically to gain a competitive edge (Elayan & Sleimi, 2021; Masele & Rwehikiza, 2022). This reality makes Tanzania's HLIs provide an appropriate environment for analysing the role of HRIS usage in the HR functioning of higher learning institutions as organisations.

The main objective of this study was to analyse how the use of HRIS affects the competitiveness of HLIs. Specifically, the study aimed to determine the influence of HRIS usage on (a) HLIs' administrative costs, (b) HR service delivery, and (c) HR service innovation. By determining the role HRIS plays in the development of organisational competitiveness, this research offers valuable knowledge that could benefit HR managers and professionals, managers of HLIs and other organisations, and policymakers.

## Literature Review and Hypotheses

This study aimed at examining the role of HRIS in fostering organisational efficiency for selected HLIs in Tanzania in a bid to gain a competitive advantage. This section presents the conceptual and theoretical issues of HRIS and the study hypotheses linking HRIS usage with the dimensions of organisational efficiency measure in terms of administrative costs, HR service delivery, and HR service delivery.

### The HRIS Concept

HRIS is a technology that integrates HRM and ICT whose main purpose is to enhance the efficiency and effectiveness of the HR functions in an organisation (Bilgic, 2020; Hosain et al., 2020; Khrais *et al.*, 2021). Barišić, Poór and Bach (2019) describe HRIS as the application of technology in delivering HR practices to manipulate the performance of the people they rely on to succeed. On the other hand, Hendrickson (2003) defines HRIS as integrated systems for capturing, managing and analysing an organisation's human resource information. In essence, HRIS entails the use of specialised computer modules to manage HR activities such as data collection and storage, processing, and analysis, and retrieval and dissemination of employee information (Bilgic, 2020).

The ever heightening importance of HRIS is based on how leveraging technology can significantly foster the management of an organisation's human capital (Ramírez & Tejada, 2022). Indeed, HRIS facilitates the effective and efficient management of HR functions such as performance appraisal, compensation, benefits, competencies, and development plans. The literature indicates that organisations with well-developed HRIS can make the HR function more strategic, hence contributing positively to the organisation's developing of a competitive advantage over others (Alkhwaldi *et al.*, 2022; Antoni *et al.*, 2020). Also, automating HR processes can reduce administrative workloads and errors, and expedite processes to further boost operational efficiency (Elayan & Sleimi, 2021). Because of the accurate information it produces, HRIS also enables managers to make informed staffing decisions.

### Theoretical Perspectives

Several theories are relevant to the study of HRIS in HLIs, including ICT theories, such as the Theory of Reasoned Action and the Unified Theory of Acceptance and Use of Technology (UTAUT) and strategic management theories and models like the Resource-Based View of a firm, Innovation Diffusion Theory, the Learning Organisation Model and the Dynamic Capability Theory. However, the Dynamic Capabilities Theory (DCT) suited this study since it focuses more on how HRIS provides the organisation with the capability to be more competitive. Goodhue and Thompson (1995, 1989) developed the DCT before Teece and Pisano (2003) refined it to explain how organisations operate in dynamic environments to achieve and sustain their competitive edge.

In this study, DCT provides a robust platform for understanding how HLIs can develop and sustain a competitive edge in fast-changing business environments. HRIS can also be complementary to a distinctive resource base that provides dynamic capabilities to the organisation (Bondarouk et al., 2017). HRIS ensures the integration of HRM with other management functions, thus lowering administrative costs and contributing to improved service delivery and the overall competitive advantage (Elayan & Sleimi, 2021). In fact, ICT can align and reconfigure the HR processes to facilitate effective skill acquisition,

performance management, employee training, and leadership development. The HRIS usage also enables HR professionals to become strategic and important players in an organisation (Marler & Fisher, 2013). Therefore, HRIS adoption enables HLIs to develop new HR capabilities that help them cope with the ever-changing environment and gain a sustainable competitive advantage. These models are the most powerful and robust tools for assessing the effectiveness of information systems in organisations (Alkhwaldi et al., 2022; Zaineldeen *et al.*, 2020). Although their development occurred several decades ago, they are still applicable in recent articles (Fussell & Truong, 2022; Jeyaraj, 2022; Muchenje & Seppänen, 2023; Wang *et al.*, 2022).

## **Hypothesis Development**

The adoption and use of HRIS are crucial in enabling organisations to improve their HRM capabilities and their competitive advantage (Bondarouk *et al.*, 2017). HRIS enables organisations to change the role of HRM professionals from that of an administrative expert to that of a strategic partner (Iqbar et al., 2019). The expected relationship between the use of HRIS and organisational competitiveness through the effectiveness and efficiency of the HR function is explained in the next sections.

### ***HRIS Usage and the Quality of HR Service***

The introduction and application of HRIS in organisations has, in an unprecedented manner, revolutionised HR services delivery in today's organisations. HRIS is expected to improve the quality of services the HR department or professionals provide by providing timely information to employees and supervisors, producing accurate data for decision-making, facilitating self-service for employees and knowledge sharing with various members of the organisation at different levels. In this regard, extant literature points to the positive role that HRIS can play in the delivery of HR services, as documented in several articles.

Alam et al. (2019), who studied the role of ICT in manufacturing firms, found that it positively impacts organisational performance. The performance of an organisation can also manifest excellence in service delivery and, hence, effectiveness in various functional areas of management, including HRM. Begum et al. (2020), who studied the impact of HRIS implementation, found that HRIS applications increased employee productivity, which can be attributable to the quality of HR services. Karanja *et al.*, (2018) examined the use of ICT in universities in Kenya using a descriptive survey and found that integrating ICT into HRM improved HR services extended to staff. Thus, based on the existing literature, a clear positive impact of the use of HRIS on HR services can be established. The following hypothesis describes this relationship:

**Hypothesis 1:** *HRIS usage is positively related to the quality of HR service.*

### ***HRIS Usage and Administrative Costs***

The HRM function has traditionally relied on paper-intensive processes to serve both internal and external stakeholders. Despite the high costs associated with setting up these systems, the use of HRIS can reduce the administrative costs of HRM activities and the organisation in general (Alkhwaldi *et al.*, 2022; Begum *et al.*, 2020; Ramírez & Tejada, 2022; Singh, 2022). Begum et al. (2020), who studied the relationship between HRIS in banks in Bangladesh,

Human Resource Information Systems Usage and Competitiveness of Organisations: A Survey of Higher Learning Institutions in Tanzania

Ulingeta O.L. Mbamba & John J. Sanga

found that the use of HRIS translated into higher efficiency in terms of employee productivity and HR cost reduction.

Also, Mwantimwa's (2019) study on the use of ICT in business processes in Tanzania found that the use of ICT led to reductions in administrative costs. Similarly, Bah et al. (2022), who analysed the impact of HRIS on HR strategies using samples from commercial banks in Sierra Leone, found HRIS to be a cost-effective information system for strategic decision-making in human resources. Bondarouk *et al.*, (2017) note that sophisticated ICT systems provide self-service portals that reduce the need for a large number of HR officials to complete simple administrative tasks. Therefore, we hypothesise:

**Hypothesis 2:** *HRIS usage is negatively related to administrative costs.*

### ***HRIS Usage and HR Service Innovation***

The use of ICT enables novel ways of working in HR service delivery, such as automation, online meetings, employee self-service and paperless offices, hence leading to greater effectiveness and efficiency (Rastogi & Srivastava, 2017). Recent studies have further found such usage to boost competitiveness (Bah *et al.*, 2022; Khrais *et al.*, 2021; Mlimbila & Mbamba, 2018; Moussa & El Arbi, 2020). For example, Ngulugulu *et al.* (2023), who studied the adoption of HRIS in Tanzania's public sector, found that increased innovation was one of the positive outcomes of HRIS adoption and application.

Bourke and Crowley (2015) also examined the impact of the complementarity of HRM and ICT on the innovation performance of firms in transition countries and found that the use of ICT in HRM had a positive bearing on their innovation performance. Similar results were evident in several other studies (see, for example, Khrais *et al.*, 2021; Mlimbila & Mbamba, 2018; Moussa & El Arbi, 2020). Bah *et al.*'s (2022) analysis of the impact of HRIS on HR strategies using samples of commercial banks in Sierra Leone found that HRIS can harness a creative and innovative workforce. The use of HRIS, therefore, can increase the innovative capacity of HR staff in the delivery of HR services, hence the following hypothesis:

**Hypothesis 3:** *HRIS usage is positively related to innovation in HR service delivery.*

## **Methodology**

### **Participants**

The study population for this quantitative research consisted of heads of unit and HR professionals responsible for handling HR processes in selected Tanzania HLIs. Heads of academic and administrative units, HR professionals and administrative officers are users of HRIS in HLIs. Whereas the HLIs under review were selected purposively based on the number of years they had been in operations, the respondents were also purposively selected but based on their active involvement in HR activities such as payroll and incentive management, attendance and performance management, recruitment, training and career development, and health and safety management. In all, 12 HLIs drawn from Dar es Salaam, Morogoro, Dodoma, Iringa, Mbeya and Mwanza regions participated in the study. These regions account for the bulk of HLIs operating in the country. To collect requisite data, the study employed a questionnaire administered with at least ten (10) participants from each

institution, hence a targeted total of 200. Subsequently, only 176 completed questionnaires were eligible for further data compilation and quantitative analyses.

## Measurement

For this study, we developed a survey questionnaire based on instruments used in previous studies, such as Parry (2011) and Ball (2001), to measure the constructs of the study: HRIS use, administrative costs, quality of HR services, and HR service innovation. Broderick and Boudreau’s (1991) framework for HR competitive objectives and computer application informed the adapting and customisation of the data collection instrument. As with the earlier instruments (see, for example, Amoako *et al.*, 2023; Prikshat *et al.*, 2023), we largely adopted the Broderick and Boudreau (1991) framework. All the question items were in the form of Likert-type questions based on a five-point scale.

## Results

### *Descriptive Statistics*

The study surveyed 22 of the 49 HLIs operating in Tanzania. From each of these institutions, the study collected an average of eight questionnaires. This return served as a good representation of the study population. Table 1 presents the distribution of the sample in terms of gender, age, area of work, level of education and experience:

**Table 1:** Age and education profiles of respondents

Variable	Count	Percent	Variable	Count	Percent
Gender			Education level		
Male	92	52.3	Less than a Diploma	9	5.1
Female	84	47.7	Diploma	28	15.9
			Bachelor	79	44.9
Age in years			Masters	44	25.0
<30	32	18.2	PhD	16	9.1
30 to 39	59	33.5			
40 to 49	45	25.6	Experience in years		
above 50	40	22.7	<5	13	7.4
			5-10	34	19.3
Section			11-15	50	28.4
Administration	69	39.2	16-20	48	27.3
Human Resource	76	43.2	>20	31	17.6
ICT	31	17.6			
<b>Grand Total</b>	<b>176</b>		<b>Grand Total</b>	<b>176</b>	

As Table 1 illustrates, there was an even distribution between both gender and age in the sample. Most of the respondents worked in HR and administration, only a few did not have a university degree, and less than 10% had less than five years of experience. It can be confidently said that the sample was generally well-suited for the study.

### *Analysis of the Measurement Model*

The assessment of the study's reflective measurement model included testing the reliability and validity of the study's variables. Reliability was assessed using factor loadings ( $> 0.70$ ), Cronbach's alpha ( $0.70 \leq \alpha < 0.95$ ), composite reliability ( $0.70 \leq CR < 0.95$ ), Dijkstra-Henseler Rho ratio ( $0.70 \leq \text{Rho-A} < 0.95$ ) and average variance extracted ( $AVE > 0.50$ ), with recommended cut-off values in parentheses (Hair Jr. et al, 2021). As Table 2 further demonstrates, all the factor loadings and the values for Cronbach's alpha, composite reliability and Dijkstra-Henseler Rho ratio exceed the recommended threshold, which implies the soundness of the constructs' reliability. Indeed, all the values are above the threshold of 0.50, which confirms the convergent validity of the reflective scales.

The average variance extracted (AVE) helped to measure convergent validity. As Table 3 shows, all the values of AVE are greater than 0.5 and all correlations between the constructs examined do not exceed the square-root of AVE of the individual constructs, hence confirming the internal consistency and discriminant validity of the reflective scales.



**Table 2.** Outer model results corresponding to four study constructs

Indicator	Loading	$\alpha$	<i>Rho-A</i>	CR	AVE
<b>Administrative Cost</b>		0.895	0.897	0.917	0.614
adcost1	0.821				
adcost2	0.754				
adcost3	0.760				
adcost4	0.815				
adcost5	0.794				
adcost6	0.750				
adcost7	0.787				
<b>HR Service Delivery</b>		0.874	0.897	0.917	0.612
hrserv1	0.807				
hrserv2	0.731				
hrserv3	0.809				
hrserv4	0.779				
hrserv5	0.787				
hrserv6	0.777				
<b>HR Service Innovation</b>		0.879	0.880	0.916	0.733
inno1	0.853				
inno2	0.862				
inno3	0.859				
inno4	0.850				
<b>HRIS Usage</b>		0.930	0.930	0.945	0.741
usage1	0.787				
usage2	0.874				
usage3	0.875				
usage4	0.873				
usage5	0.851				
usage6	0.902				

$\alpha$  = Cronbach's Alpha; CR = Dijkstra–Henseler's Composite Reliability; *Rho-A* = Jöreskog's Composite Reliability; AVE = Average Variance extracted; All loadings are significant at the 0.001 level.

In addition, we assessed the discriminant validity using the Fornell-Larcker criterion. Previous studies have proposed the use of the Fornell-Larcker criterion and the heterotrait monotrait (HTMT) to assess discriminant validity. Generally, an HTMT of below 0.9 is acceptable for many studies whereas the square-root of AVE for related constructs must be equal to or greater than the corresponding Fornell-Larcker criterion (see Table 3). For example, AVE for administrative costs is 0.614 (the square-root is 0.784, which is equal to or greater than the Fornell-Larcker criterion (0.784). In other words, the survey had passed the discriminant validity test, as Table 3 further illustrates:

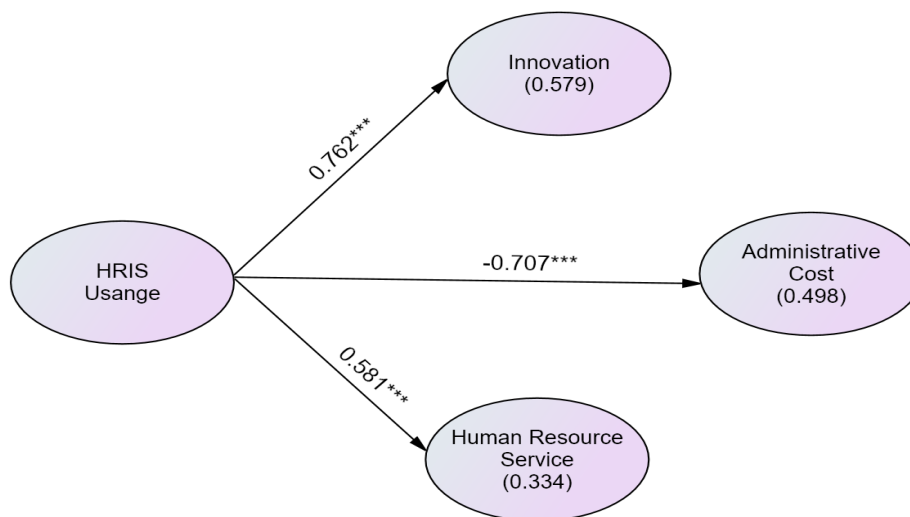
**Table 3: Fornell-larcker and HTMT criteria**

	1	2	3	4
1. Administrative Cost	<b>0.784</b>	<i>0.737</i>	<i>0.687</i>	<i>0.771</i>
2. HR Service Delivery	-0.668	<b>0.782</b>	<i>0.604</i>	<i>0.626</i>
3. HR Service Innovation	-0.612	0.536	<b>0.856</b>	<i>0.840</i>
4. HRIS Usage	-0.707	0.581	0.762	<b>0.860</b>

HTMT ratio over the diagonal (italics). Fornell–Lacker criterion: square root of AVE in diagonal (bold) and construct correlations below the diagonal

### Results Relative to the Research Hypotheses

The hypotheses were tested using path coefficients. From Figure 1, it is evident that the HRIS usage has a significant bearing on the administrative costs, service quality HR, and innovation, with all these variables significant at  $p < 0.001$ . The study results further shows that the use of information systems lowers the HR operating costs in addition to improving the HR service quality and HR service innovation. Implicitly, HRIS negatively correlates with HR operating costs because the more an organisation uses HRIS, the lower HR operating costs become. Generally, all three hypotheses are acceptable based on the study results:



**Figure 1:** Path coefficients values  
(\*\*\* means  $p < 0.001$ )

The coefficients of determination (r-squared) show that HRIS application as a determinant of operating costs, HR service quality and HR service innovation are 0.498, 0.334 and 0.578, respectively. This outcome implies that HRIS use accounts for 50%, 33% and 58% of the operating costs, service quality HR and service innovation HR, respectively. As two of the coefficients of determination ( $R^2$ ) are above 0.5, they indicate moderate determination, with one above 0.25 but below 0.5, signalling a weak determination. Significantly, the literature qualifies coefficients of determination of 20% or more to be appropriate and acceptable HR (Ringle *et al.*, 2020).

### Discussion of the Results

Generally, the use of information systems has been subjected to extensive scholarly scrutiny in education, marketing, logistics management and financial management. In many areas, the use of information systems has proven to be a source of business success. The results of this study support the main hypothesis that the use of HRIS contributes positively to the competitiveness of organisations by reducing operating costs, improving the quality of HR services, and enhancing HR service innovation. The results show that the use of HRIS has a statistically significant positive effect on the quality of HR services ( $\beta = 0.581$ ,  $p < 0.001$ ); and HR service innovation ( $\beta = 0.762$ ,  $p < 0.001$ ), but a statistically significant negative effect on administrative costs ( $\beta = -0.707$ ,  $p < 0.001$ ). On the one hand, the increased use of

HRIS leads to an improvement in the quality of HR service and HR service innovation but to a decrease in administrative costs, on the other hand.

These findings are consistent with the provisions of the theories underlying this study and several previous empirical studies (Antoni *et al.*, 2020; Bah *et al.*, 2022; ElNakib, 2022; Hossain *et al.*, 2022; Mlimbila & Mbamba, 2018; Mohammed, 2021). For example, in assessing the impact of HRIS on commercial banks' HR strategies, Bah *et al.*, (2022) found that HRIS enabled high-quality HR decisions. In addition, Mlimbila and Mbamba (2018) found that the application of information systems improved port logistics performance.

Despite the mixed results of previous studies (see, for example, El Idrissi *et al.*, 2021), the study results demonstrate that the use of HRIS negatively correlates with administrative costs ( $\beta = -0.707$ ,  $p < 0.001$ ), implying that the use of HRIS reduces the administrative costs for HRM activities. These results are consistent with those of Ramírez and Tejada (2022), Begum *et al.* (2020) and Mwantimwa (2019), who all found a significant positive effect of HRIS on cost efficiency. The differences are mainly in how inherent costs were measured in the study. The final hypothesis for this study concerned the impact of HRIS use on HR service innovation in HLI. The results further show a positive impact of HRIS on HR innovation ( $\beta = 0.762$ ,  $p < 0.001$ ). These results are consistent with the study by Bansal *et al.* (2023), which found a positive impact of HRIS use on organisational innovativeness. Similar results were also obtained by Moussa and El Arbi (2020) and Mwantimwa (2019).

The difference between the present study and previous studies lies in the approaches in use. Many of the previous studies had taken an ICT orientation in their investigations while the current research has adopted a strategic approach. The findings provide proof that HRIS can help the HR function become a strategic partner of an organisation by enabling it to contribute positively to the competitiveness of the institution. Moreover, the study has established that HRIS enables an organisation to improve service delivery and innovation and reduce administrative costs, which can enhance its competitive advantage. In addition, even though they serve as conduits for transferring knowledge to other organisations HLIs have almost been neglected in the HRIS research, particularly in the developing country context of Tanzania. In fact, this study is one of the few investigations conducted to examine the role HRIS plays in organisational competitiveness.

## **Conclusion and Recommendations**

The main objective of this study was to determine the extent of HRIS use and how it relates to the competitiveness of HLIs in Tanzania. Overall, this study shows that HRIS is increasingly becoming important in supporting HRM processes in organisations of all sizes, regardless of the industries or sectors in which they operate. The findings confirm that the use of HRIS is a critical factor in the delivery of HR services in HLIs. The study also shows that investing in the use of HRIS can make HR departments more innovative and enable them to deliver high-quality HR services at lower administrative costs. After testing the three hypotheses, the study shows that the use of HRIS reduces the cost of operating the HRM system, improves the delivery of HR services, and increases the innovativeness of HR professionals. In fact, as the study results affirm, implementing HRIS enables organisations to maximise the strategic capabilities of the HR function, which can give the organisation a competitive advantage. Moreover, HRIS has the potential of overcoming the limitations of HRM identified in many studies that have highlighted its inconsequential contribution to the strategic performance of the organisation.

Human Resource Information Systems Usage and Competitiveness of Organisations: A Survey of Higher Learning Institutions in Tanzania

Ulingeta O.L. Mbamba & John J. Sanga

Furthermore, the study provides empirical evidence on how HRIS contributes to making the HR function much more strategic than without such an application. This work also contributes to the existing literature by examining the unique role HRIS plays in HRM in addition to demonstrating the contribution it can make to further enhancing organisational strategic performance. Unlike most previous studies that focus on the contribution of ICT to organisational performance, this study is specific to HRIS, which most organisations, including HLIs, have adopted as a tool for day-to-day HRM activities. In a way, the study also dispels the long-standing misconception that associates the use of HRIS with high operational costs. Results from this study also indicate that HRIS usage negatively correlates with administrative costs, which signals that it contributes positively to a reduction of organisational HR operational costs. Even though HRIS might involve huge installation costs, the huge investment is worthwhile since once in place the seemingly high costs can be offset by drastic cuts in administrative costs and significantly enhanced HR operational efficiency.

### **Implications for theory**

Theoretically, this study contributes to knowledge in diverse ways. It has demonstrated that HRIS can change the orientation of HRM from an administrative role to a more strategic partnering one. This study involved a comprehensive examination of the different ways HRIS influences the competitiveness of HLIs. Unlike previous studies that have investigated isolated aspects of HRIS, this study conducted a holistic analysis of how HRIS contributes to improved HR operational efficiency of HLIs. The study has also addressed the need to grasp the practical benefits of effective HRIS usage which include improved HR service delivery and HR service innovation and reduced administrative costs. The results further show that higher HRIS use can translate into improved HR service delivery while bringing administrative costs down, which is crucial for strategic planning. Coming up with these results allows the study to provide valuable insights which may convince managers of organisations that leverage HRIS for their sustainable competitiveness requires increased investment in it. The study findings also offer more empirical evidence on the applicability of the Dynamic Capabilities Theory in the study of HRIS. Indeed, managing HR as a strategic partner transforms it into a strategic capability capable of giving the organisation a competitive edge. For many years and in most studies, HRM has primarily been an administrative management function with little to do with the strategic affairs of an organisation (Bondarouk et al., 2017), the dynamic that changes with HRIS application.

### **Practical and Policy Implications**

The findings provide organisational managers with insights that can assist them in making their ICT investment decisions. Specifically, HR managers can benefit from insights into the application of ICT for HRM activities. The use of HRIS has been proven to reduce administrative costs, improve HR service delivery and increase HR innovation. These aspects can give an organisation a competitive advantage over its rivals. As many previous studies have noted, the use of HRIS reduces the administrative burden while rewarding HR professionals with more time to work on strategic matters.

In most advanced economies, HRIS has now become a powerful strategic tool that small and medium-sized enterprises can also exploit to their advantage. Based on the study findings, managers of HLIs, whether private or public, should increase the use of HRIS to further improve the quality of their HR service delivery and innovation. As Amani (2018)



suggests, HLIs play a crucial role in creating knowledge-based societies by developing knowledge through teaching, research and dissemination, utilisation and maintenance of knowledge. As such, HLIs are expected to lead the adoption and application of new technologies, including in HR management. In this regard, HLIs must harness the opportunities the HRIS application engenders by optimising its usage in all functionalities. Therefore, HLIs should focus on the strategic potential of HRIS as justification for its incremental usage.

In the long run, actualising these recommendations by integrating HRIS seamlessly in the HR operations could improve employee job satisfaction, organisational commitment, and job performance, which can reward the organisations adopting such modern ways of human resource management a competitive advantage in the labour market. With the increasing competition in the labour market that HLIs experience today, the use of HRIS can give an organisation an edge over its competitors when attracting employees. After all, HRIS facilitates and expedites data management for decision-making. As a result, most strategic decisions, including HR-related decisions, can be made based on scientific evidence, which can lead to greater efficiency and effectiveness. In fact, effective use of HRIS promotes learning among employees and the management team, which usually strengthens the dynamic capabilities of organisations that adopt and integrate such systems in their operations.

### **Limitations**

The data for this study was collected in the United Republic of Tanzania using a questionnaire as the sole data collection tool. Future research can extend this study by using other data collection methods besides the questionnaire survey including observations of real-time investments in HRIS, in-depth interviews and document reviews. As only the HLIs participated in this study, future research could cover other sectors, especially those that are labour-intensive in health and security domains.

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Human Resource Information Systems Usage and Competitiveness of Organisations: A Survey of Higher Learning Institutions in Tanzania

Ulingeta O.L. Mbamba & John J. Sanga

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