Technological Determinants of Human Resource Information System Effectiveness in Tanzania

[1]Kamala Mugisha, PhD (Correspoding Author)
ORCiD: https://orcid.org/0009-0001-6362-094X
Department of Management Studies, Tanzania Institute of Accountancy, Tanzania
Email: mugisha.kamala@tia.ac.tz

[2]Hadija Matimbwa, PhD
ORCiD: https://orcid.org/0000-0001-9577-1702
Department of Business Management, Mbeya University of Science and Technology, Tanzania
Email: hadija.matimbwa@must.ac.tz

Abstract

Organizations are increasingly moving from traditional paper files to digital filing systems to gain a competitive edge and improve access to human resources and HR-related information. This digitalization process not only makes data more accessible but also enhances its utilization for HR decision-making. As a result, HR-related information becomes more comprehensive, accurate, and up-to-date. This study specifically investigates the impact of technological factors on the effectiveness of human resource information systems (HRIS) within local government authorities (LGAs) in Tanzania. The research utilized a combination of descriptive and inferential statistics, including ordered logistic regression analysis, to examine the impact of technological characteristics on the effectiveness of Human Resource Information Systems (HRIS). The findings revealed that factors such as compatibility, complexity, usefulness, and reliability play a crucial role in determining the timeliness, comprehensiveness, and accuracy of data retrieval within HRIS. The study offers valuable insights for improving human resource management practices in LGAs) through the adoption of computerized HRIS. The discussed approach enhances decision-making and improves access to information, contributing to the achievement of organizational goals. It also emphasizes the importance of regularly updating systems to keep pace with changing technological landscapes.

Journal of Policy and Development Studies (JPDS)

Vol. 16 Issue 2 (2024)
ISSN(p) 1597-9385
ISSN (e) 2814-1091
Home page:
https://www.ajol.info/index.php/jsda

ARTICLE INFO:
Keyword
Human resource information system, technological determinants, information system theory, information processing system

Article History
Received:
26th September 2024
Accepted:
29th November 2024
DOI:
https://dx.doi.org/10.4314/jpds.v16i2.15

1. Introduction

The human resources (HR) department is crucial for the effective functioning of organizations in all sectors, including public, private, and non-profit. Its primary responsibilities include managing personnel records and overseeing recruitment and selection to attract and hire suitable candidates. The HR department is responsible for generating employee reports that provide insights into workforce performance and wellbeing, covering aspects like attendance and performance evaluations. Additionally, HR plays a crucial role in career planning and development, creating growth pathways and offering skill enhancement opportunities through training programs. By investing in employee development, organizations can cultivate a motivated and skilled workforce that benefits the entire organization (Hickman and Lee, 2001; Noe et al., 2015).

Organizations have invested significantly in developing efficient systems to streamline processes and enhance productivity, moving away from traditional paper-based methods of managing personnel records. These outdated systems posed challenges such as slow document retrieval, reduced data accuracy, and delays in reporting, prompting a shift to digital solutions to improve operational effectiveness (Ishijima et al., 2015). This transition is particularly crucial for integrating Human Resources (HR) and finance, as the lack of integration often resulted in discrepancies and financial losses, including issues like ghost workers—employees recorded but not present in the organization.

The development of the Human Resource Information System (HRIS) has emerged as a solution to modern challenges in managing employee data, driven by advancements in technology. The HRIS consists of two main components: HR practices, which focus on managing employee information, recruitment, payroll, and performance evaluations, and Information and Communication Technology (ICT) applications, which provide efficient data storage and analysis tools. Together, these components help organizations streamline HR processes, improve data accuracy, and minimize financial losses from poor employee management (Kroenke, 2014). The new system's implementation has significantly transformed the Human Resources (HR) department and increased sharing of employee information and enhancing coordination and communication both within HR and across departments. This has broken down silos and increased accessibility to crucial data for employees and management. By streamlining processes and reducing inefficiencies, the system has also led to a decrease in operational expenses, benefiting the organization's financial health (Akoyo and Muathe, 2017; Troshani et al., 2011; Aggarwal and Kapoor, 2012). The HRIS is vital for effective workforce management, consisting of two key components, one being the ICT application. Its success relies on the availability of advanced ICT equipment and the proficiency of its users, making robust infrastructure and expertise essential for maximizing its potential.

In Tanzania, various organizations, including government ministries, departments, and local government authorities (LGAs), are utilizing HRIS to manage employee records and streamline human resource processes. The private sector, including businesses and NGOs, is also adopting HRIS to enhance productivity and decision-making. The implementation of HRIS in the government began in 2011 at the central level and later extended to LGAs, reflecting a commitment to modernizing human resource management for improved efficiency and transparency. The adoption of the HRIS system depends on accessible technology and staff proficiency in ICT. The government has invested in essential equipment and comprehensive training for HR officers in

LGAs to ease the transition from outdated paper-based practices. Consequently, the HRIS system is now widely used, enhancing efficiency in HR processes.

However, challenges persist, including the generation of insufficient, inaccurate, and outdated data on civil servants. This has resulted in issues like ghost workers on payrolls, inefficiencies in recruitment, and fraudulent activities in payroll management, indicating serious underlying problems (Jorojick, 2015; Lameck, 2015). Recent y99ears have seen a notable increase in research on Human Resource Information Systems (HRIS) (Keegan et al., 2012; Al-Dmour and Zu'bi, 2014; Bhuiyan and Rahman, 2014), reflecting a growing interest in enhancing HR practices and technologies. However, most studies on HRIS have occurred outside Tanzania, with limited research specifically examining its effectiveness within the country. Existing studies largely focus on the utilization and acceptance of HRIS among stakeholders (Lema, 2013; Kassam, 2013; Jorojick, 2015; Matimbwa and Masue, 2020), and there is a significant gap in research analyzing how technological components affect HRIS effectiveness. This gap is critical, given government reports on challenges in the public service stemming from HRIS implementation. Therefore, this study aims to investigate the relationship between technological factors and HRIS effectiveness in Tanzanian LGAs, focusing on key questions regarding HRIS deployment in these organizations.

(Question 1): How do technological determinants relate to the effectiveness of HRIS in the context of LGAs in Tanzania?

(Question 2): To what degree do technological determinants influence the effectiveness of HRIS within LGAs in Tanzania?

The exploration of technological attributes' influence on HRIS effectiveness in Tanzania's LGAs offers valuable insights. Existing research mainly addresses adoption rates and benefits, with developed countries showing a correlation between technological characteristics and system performance (Lema, 2013; Kassam, 2013; Jorojick, 2015). This indicates that utilizing appropriate technological features can enhance HRIS functionality and efficiency, improving management in LGAs.The study examines the relationship between technological attributes and the effectiveness of Human Resource Information Systems (HRIS) in Tanzania LGAs. It focuses on aspects such as timeliness, completeness, and accuracy of information, aiming to identify correlations and their statistical significance. Key factors like compatibility, complexity, reliability, and usefulness are analyzed for their impact on HRIS efficacy. LGAs, which were established during the British colonial period, are important for grassroots public administration. After being abolished in 1972, they were reinstated in 1982 through Acts No. 7–10 to enhance decentralization and address community needs.

Local governments in Tanzania are governed by Article 145 of the 1977 Constitution, which outlines their functions and promotes community involvement in decision-making. The Tanzanian government focuses on increasing local autonomy and citizen participation, delegating the planning and execution of development programs to communities.

2.0 THEORETICAL BACKGROUND INFORMATION OF THE HRIS

There exist multiple conceptual perspectives about the interpretation of HRIS. Nevertheless, several definitions uniformly characterise HRIS as a software or web-based system designed to facilitate the input, monitoring, and information requirements of the human resources, management, and accounting departments within an organisation (Hendrickson, 2004; Gupta,

2013). The implementation of a system is essential to effectively manage employees, foster knowledge development, promote career progression and development, and provide equitable treatment (Singh et al., 2011; Jahan, 2014).
The initiative seeks to empower communities by entrusting them with the planning and execution of development programs. This approach fosters active participation, allowing individuals to shape initiatives that directly impact their lives. By moving away from top-down decision-making, local groups can contribute valuable insights, resulting in more tailored and effective programs. This ownership fosters enhanced accountability and sustainability. Supportive workshops and collaborative meetings will facilitate meaningful participation, ultimately cultivating an engaged community that drives its own development. Furthermore, the implementation of a comprehensive management system is crucial for effectively managing personnel, streamlining communication, and promoting a culture of continuous learning. It encourages career growth through clearly defined advancement pathways and mentorship opportunities, ensuring equitable treatment and inclusivity within the workplace. (Singh et al., 2011; Jahan, 2014).

Matimbwa and Masue (2019) highlight that the implementation of the system empowers human resource managers within an organization to access crucial information essential for offering lawful, ethical, and effective support to their employees. This capability allows managers to navigate complex employee needs and deliver assistance that adheres to legal and ethical standards. In a similar vein, Kroenke (2014) emphasizes that the cornerstone of this study revolves around the application of ICT. The significance of ICT stems from its fundamental integration within technological frameworks, underscoring its critical role in enhancing organizational operations and communication processes. By leveraging ICT, organizations can optimize their workflows and improve overall efficiency. ICT relies on effective hardware and software for optimal system performance. Essential hardware includes desktop PCs, Uninterruptible Power Supplies (UPS), and printers. Key software components involve server-side applications (HTML, Java, Perl) and communication protocols for intranets and relational databases for efficient record-keeping and payroll management. These elements together ensure effective operation, as emphasized by the World Bank in 2002. In addition, a reliable internet connection is essential for the smooth communication of information among departments. It is important to highlight that almost all local government authorities (LGAs) are linked through the National Information Technology Backbone (NICTBB) optical fibre network (URT, 2016). This research makes use of the Unified Theory of Acceptance and Use of Technology (UTAUT), as illustrated in figure 1 by Venkatesh et al. (2003), to assess how technological factors influence the efficacy of Human Resource Information Systems (HRIS). The theory has been utilized in numerous studies to investigate how users accept technology (Tagoe, 2012; Kassim et al., 2012).

Research shows that two key factors—technology effectiveness and user-friendliness—are crucial for adopting new technological solutions (Davis, 1989). The Unified Theory of Acceptance and Use of Technology (UTAUT) provides a framework for integrating HRIS) in LGAs to improve the quality and accuracy of outputs. This study examines the impact of attributes like compatibility, complexity, reliability, and usefulness on HRIS effectiveness in Tanzanian LGAs, measured by data completeness, timeliness, and accuracy, aiming to enhance human resource management practices.

3. Methodology

The study was conducted across six locations on the Tanzanian mainland, namely Mwanza, Arusha, Dodoma, Morogoro, Iringa, and Kagera. The selected districts show different levels of ghost workers, as reported in the Civil Servants' Auditing Report of 2016 (URT, 2016). Before selecting the regions, a stratification process was performed based on the reported number of ghost workers. Three strata were created according to the quantity of ghost workers: the high stratum (with more than 150 ghost workers), the moderate stratum (including between 51 to 150 ghost workers), and the low stratum (consisting of fewer than 50 ghost workers).

The study examines the influence of technological factors on the effectiveness of HRIS by assigning distinct identification numbers to regions for tracking. Two regions were randomly selected from each stratum for focused analysis. Quantitative data was collected using a standardized questionnaire distributed to HROs, who were chosen for their expertise and regular use of HRIS in LGAs.

The sampling frame employed in this research encompassed a total of 249 HROs strategically located within the specified geographic regions. From this extensive pool, 213 HROs were ultimately integrated into the study, with the sample size meticulously calculated using the renowned formula established by Robert and Morgan in 1970. Out of the initial group of 213 participants, the researcher successfully obtained responses from 201 individuals, a number that previous studies have identified as sufficient for robust analysis (Elamir and Sadeq, 2010; Mohammadi et al., 2015; Basbaset et al., 2013). To gather qualitative data, the researcher conducted in-depth interviews with carefully selected key informants, chosen for their specialized knowledge and expertise in HRIS. The people included in this category were Human Resource Officers (approvers) and the directors of the Human Capital Division. A thorough sample consisting of six Human Resource Officers (known as "approvers") and two Directors from the Human Capital Division was chosen and then interviewed.

The study analyzed data collected from structured questionnaires utilizing SPSS software, version 21.0. Descriptive statistics were employed to assess key respondent data through frequency patterns and cross-tabulation. The research examined the influence of technological factors on the effectiveness of Human Resource Information Systems (HRIS) by applying an ordered logistic regression model. The primary technological characteristics investigated included compatibility, complexity, reliability, and utility, which were treated as predictor variables. HRIS effectiveness was evaluated through dependent variables such as timeliness, completeness, and accuracy, with distinct models created for each dependent variable to explore their relationships with the predictors.

$$\mathbf{Prob}(Y) = \beta_0 + \beta_{ij} X_{ij} + \ldots + \beta_n X_n + \varepsilon$$

Where:

Y = HRIS effectiveness in LGAs (ordered to be measured by Five Point Likert Scale of timeliness of information, Completeness of information and Accuracy of information).
β0 = Constant term
βij– βnj = Explanatory indicators (coefficient estimates) of predictor ‘i’ to ‘n’ in setting j

Xij – Xij= Predictor ‘i’ to ‘n’ of Y in setting j in this study, predictors are technological determinants,
ε = Normally Distributed Error Term

The dependent variable was assessed using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Technological components were divided into numerical (discrete and continuous) and categorical variables. Multicollinearity among the independent variables was evaluated, with a threshold correlation coefficient of 0.9 or greater (Pallant, 2005). The highest observed correlation was 0.444, so no variables were excluded from modeling. Qualitative data underwent content analysis to categorize information relevant to the research.

4. Discussion and Results

4.1 General Distribution of Technological Determinants

Table 1 presents a detailed analysis of the technological determinants among participants in the study regions. The data reveal that a noteworthy 47.8% of the HROs surveyed maintained a neutral perspective regarding the compatibility of HRIS. Furthermore, a substantial majority (67.7%) of respondents acknowledged that the system demonstrated a significant level of flexibility, indicating a higher level of agreement with its complexity attributes. The data suggests that the subjects involved recognize that HRIS provide clear directives for users to efficiently navigate the system, input data, and interpret outputs, with associated processes being both transparent and thorough. As indicated in Table 1, there was a notable variation in opinions among participants regarding the reliability of HRIS, with 75.6% expressing contrasting views. Nonetheless, a significant majority, approximately three-quarters, concurred on the utility of HRIS in their organizational context.

Table 1: General Distribution of Technological Determinants

Attributes	Responses	n (%)
Compatibility (i. e. the system can be rapidly changed or upgraded and the system can be legally accessed from other devices)	Disagree	28(13.9)
	Neither agree nor disagree	96(47.8)
	Agree	77(38.3)
Complexity (i.e. the system provides clear instructions for users to operate, prepare inputs, and interpret output; and	Disagree	9(4.5)
	Neither agree nor disagree	56(27.9)
the procedures provided are clear and detailed	Agree	136(67.7)
Reliability (i.e. HRIS has been reliably operated in the district)	Disagree	35(17.4)
	Neither agree nor disagree	83(41.3)
	Agree	83(41.3)
Usefulness (i.e. the information addresses my needs and the system facilitates decision making)	Disagree	14(7)
	Neither agree nor disagree	35(17.4)
	Agree	152(75.6)

Source: Field Data (2024)

4.2 Distribution of Technological Determinants Across Regions with High, Medium, and Low Levels of HRIS Challenges

Table 1 shows an analysis of the technology factors among study participants. The results indicate that 47.8% of the HROs surveyed had a neutral opinion about how well HRIS works with their systems. A large majority (67.7%) of respondents noted that the system is flexible, showing they agree more with its complex features. The findings suggest that participants feel HRIS gives clear instructions for using the system, entering data, and understanding results. The processes are clear and easy to follow. Table 1 also shows that opinions varied about the reliability of HRIS, with 75.6% of participants holding different views. Nevertheless, about three-quarters agreed that HRIS is useful in their organizations

Table 2: Technological Determinants and Low Levels of Challenges of HRIS

Technological determinants		Level of Challenges of HRIS			Total		
		High	**Medium**	**Low**		**Chi-square**	**p-value**
COMPATIBILITY	Disagree	13(17.6%)	9(13.0%)	6(10.3%)	28(13.9%)	12.557	.014
	Neither agree nor disagree	39(52.7%)	38(55.1%)	19(32.8%)	96(47.8%)		
	Agree	22(29.7%)	22(31.9%)	33(56.9%)	77(38.3%)		
COMPLEXITY	Disagree	5(6.8%)	2(2.9%)	2(3.4%)	9(4.5%)	12.206	.016
	Neither agree nor disagree	29(39.2%)	11(15.9%)	16(27.6%)	56(27.9%)		
	Agree	40(54.1%)	56(81.2%)	40(69.0%)	136(67.7%)		
RELIABILITY	Disagree	14(18.9%)	13(18.8%)	8(13.8%)	35(17.4%)	15.177	.004
	Neither agree nor disagree	37(50.0%)	32(46.4%)	14(24.1%)	83(41.3%)		
	Agree	23(31.1%)	24(34.8%)	36(62.1%)	83(41.3%)		
USEFULNESS	Disagree	5(6.8%)	3(4.3%)	6(10.3%)	14(7.0%)	3.826	.430
	Neither agree nor disagree	16(21.6%)	9(13.0%)	10(17.2%)	35(17.4%)		
	Agree	53(71.6%)	57(82.6%)	42(72.4%)	152(75.6%)		
Total		74	69	58	201		

Source: Field Data (2024)

4.3 Relationship between Technological Determinants and HRIS Effectiveness

The study utilized a user satisfaction approach to evaluate the effectiveness of HRIS in LGAs. This method is based on the subjective views of users regarding the HRIS they utilize. HROs were surveyed to gauge their levels of agreement or disagreement with various statements related to their satisfaction with the HRIS.

4.3.1 Relationship between Technological Determinants and Information Timeliness

Current /Up-to-date Information

Table 3 shows that all identified technological factors have a statistically significant relationship with the current state of information. The rate of system upgrades resulted in a chi-square statistic of $\chi 2$ (df) = 11.985, $p < 0.001$. The clarity of user instructions was significantly correlated at $\chi 2$ (df) = 8.623, $p = 0.003$, and clear procedures also showed significance with $\chi 2$ (df) = 4.862, $p = 0.019$.

The reliable operation of the HRIS in the district was significant at $\chi 2$ (df) = 7.1154, $p = 0.006$, while the system's ability to address user needs was also significant at $\chi 2$ (df) = 7.1154, $p = 0.001$. The facilitation of decision-making through the system was indicated by $\chi 2$ (df) = 3.370, $p = 0.046$. Overall, these findings emphasize the importance of these technological factors in information management efficacy. However, data from other devices showed no significant correlation with the current information status, evidenced by $\chi 2$ (df) = 0.428 and a P-value of 0.305, exceeding the 0.05 threshold. Thus, these findings lack statistical significance.

4.3.2 Information Captured Time

The findings presented in Table 3 highlight several key aspects of the technological qualities and performance of the HRIS within the District. Notably, the clarity and detail of the procedures offered by the system are statistically significant, with a chi-square value of $\chi 2$ (df) = 13.493 and a p-value less than 0.001. This suggests that users find the information provided to be both clear and detailed.

Moreover, the HRIS has demonstrated consistent and reliable operation throughout the district, as indicated by a chi-square result of $\chi 2$ (df) = 6.780 and a p-value of 0.007. This stability underscores the system's dependable functionality.

Additionally, the data reveals a strong association between the system's capabilities and its effectiveness in supporting decision-making processes, with a chi-square value of $\chi 2$ (df) = 13.659 and $p < 0.001$. The legal accessibility of the system also shows statistical significance, evidenced by $\chi 2$ (df) = 8.623 and a p-value of 0.003, indicating that these factors effectively meet user needs and contribute to operational efficiency. The findings of this study reveal some important insights based on statistical analysis. Specifically, certain associations were identified as significant due to their p-values being below the accepted threshold of 0.05, suggesting a strong likelihood that these results are not merely due to chance. Notably, the analysis related to the system's role in facilitating decision-making showed a significant association, with a p-value of 0.025.

The system regularly updates and communicates clear instructions to help users operate it effectively and assess outcomes. Additionally, some analysis revealed no significant correlation between certain variables and the collected time data, indicated by a p-value of 0.120. Overall, these results contribute to our understanding of the system's effectiveness in its current form.

4.3.3 Time Saving

Table 3 presents the statistical analysis of technological factors affecting time efficiency. Results indicate that while the rapid system upgrades ($\chi^2(df) = 0.503$, $p = 0.289$) do not significantly impact time savings, clear user instructions ($\chi^2(df) = 4.922$, $p = 0.019$), comprehensive guidelines ($\chi^2(df) = 6.304$, $p = 0.009$), and user-tailored information ($\chi^2(df) = 18.055$, $p < 0.001$) significantly enhance time savings. In contrast, access from various devices ($\chi^2(df) = 2.452$, $p = 0.081$), system efficacy in decision-making ($\chi^2(df) = 0.14$, $p = 0.511$), and reliable HRIS functioning ($\chi^2(df) = 0.53$, $p = 0.467$) showed no significant correlations with time savings.

Table 3: Relationships between Technological Determinants and Information Timeliness

Determinants	n%	Current/Update Information (χ^2, p)	Information Captured Time (χ^2, p)	Time-Saving (χ^2, p)
System being changed/upgraded strongly disagree strongly agree	75(37) 126(63)	11.985, < 0.001	2.655, 0.070	0.503, 0.289
System is legally accessed strongly disagree strongly agree	110(55) 91(45)	0.428, 0.305	8.623, 0.003	2.452, 0.081
Provision of clear instruction strongly disagree strongly agree	110(55) 91(45)	8.623, 0.003	1.750, 0.120	4.922, 0.019
Procedures are clear and detailed strongly disagree strongly agree	109(54) 92(46)	4.862, 0.019	13.493, < 0.001	6.304, 0.009
HRIS reliably operated strongly disagree strongly agree	83(41) 118(59)	7.115, 0.006	6.780, 0.007	0.53, 0.467
Information addresses the need strongly disagree strongly agree	128(64) 73(36)	7.1154, 0.001	13.659, < 0.001	18.055, <0.001
HRIS facilitates decision making strongly disagree strongly agree	145(72) 56(28)	3.370, 0.046	4.372, 0.025	0.14, 0.511

Source: Field Data (2024)

4.3.4 Relationship between Technological Determinants and Information Completeness of Information

The analysis in Table 4 examined the connection between four technological factors and user information adequacy: system update frequency, clarity of user instructions, decision-making support capabilities, and legal accessibility from various devices. Each factor showed a statistically

significant correlation with information sufficiency: rapid system changes ($\chi 2$ (df) = 7.390, p = 0.005), clear instructions ($\chi 2$ (df) = 7.479, p = 0.005), decision-making support ($\chi 2$ (df) = 12.366, p < 0.001), and legal accessibility ($\chi 2$ (df) = 9.848, p = 0.001), all below the significance threshold of p < 0.05. Conversely, factors like input preparation, procedure clarity, and HRIS reliability did not show significant relationships (p-values > 0.25).

Complete Data Sets

Table 3 indicates that all technological factors significantly relate to the current state of information. System upgrades showed a chi-square statistic of $\chi 2$ (df) = 11.985, p < 0.001. User instruction clarity was significant at $\chi 2$ (df) = 8.623, p = 0.003, while clear procedures yielded $\chi 2$ (df) = 4.862, p = 0.019. The reliable operation of the HRIS was significant at $\chi 2$ (df) = 7.1154, p = 0.006, and the system's ability to address user needs also showed significance with $\chi 2$ (df) = 7.1154, p = 0.001. Decision-making facilitation had a significance of $\chi 2$ (df) = 3.370, p = 0.046. Overall, these findings highlight the importance of these factors in information management. In contrast, data from other devices showed no significant correlation ($\chi 2$ (df) = 0.428, p = 0.305).

Table 4: Relationship between Technological Determinants and Information Completeness

Features	n%	Sufficiency of Information (χ^2, p value)	Complete Data Sets (χ^2, p value)
System being changed/upgraded Strongly disagree. Strongly agree.	75(37) 126(63)	7.390, 0.005	7.390, 0.005
System is legally accessed Strongly disagree Strongly agree	110(55) 91(45)	9.848, 0.001	12.366, < 0.001
Provision of clear instruction Strongly disagree Strongly agree	110(55) 91(45)	7.479, 0.005	0.151, 0.405
Procedures are clear and detailed Strongly disagree Strongly agree	109(54) 92(46)	0.641, 0.258	0.641, 0.258
HRIS is reliably operated Strongly disagree Strongly agree	83(41) 118(59)	0.816, 0.225	0.816, 0.225
Information addresses the need Strongly disagree Strongly agree	128(64) 73(36)	0.151, 0.405	7.479, 0.005
HRIS facilitate decision making Strongly disagree Strongly agree	145(72) 56(28)	12.366, < 0.001	9.848, 0.001

Source: Field Data (2024)

Reliability of Information

The research findings in Table 5 highlight six key technological determinants that are significantly associated with reliable information, as evidenced by P-values below the 0.05 significance threshold. These determinants include: the system's provision of clear user instructions for operation, input preparation, and output interpretation ($\chi 2$ (df) = 4.607, p = 0.022); clarity and detail in the provided procedures ($\chi 2$ (df) = 12.820, p < 0.001); reliable operation of the HRIS within the district ($\chi 2$ (df) = 18.247, p < 0.001); the information being tailored to users' needs ($\chi 2$ (df) = 21.260, p < 0.001); legal access to the system from various devices ($\chi 2$ (df) = 16.958, p < 0.001); and the system's role in facilitating decision-making ($\chi 2$ (df) = 5.985, p = 0.010). In contrast, the analysis also indicated that frequent modifications or enhancements made to the system did not significantly correlate with the reliability of the information provided ($\chi 2$ (df) = 17.781, p = 0.289).

Reality of Information

Table 5 highlights significant findings regarding nine technological qualities, among which five were notably influential. Key determinants identified include the system's capacity for rapid changes or upgrades, indicated by a chi-square statistic of 9.315 and a p-value of 0.002. Additionally, the provision of clear and detailed processes is another important factor, with a chi-square test statistic of 5.143 and a p-value of 0.017. These results suggest that the system plays a crucial role in effectively supporting decision-making processes. In the analysis of the conditions assessed, the second condition yielded a chi-square test statistic of 5.635, with a corresponding p-value of 0.013. This outcome indicates that the Human Resource Information System (HRIS) has been effectively implemented throughout your district. The third condition produced a chi-square test statistic of 7.284 and a p-value of 0.005, suggesting that the information provided meets the required demands adequately. Finally, the fourth condition demonstrated a chi-square test statistic of 14.409, with a p-value of less than 0.001, underscoring the significant relevance of the information that has been provided.

The analysis revealed that five technological qualities significantly correlated with the accuracy of information, as evidenced by P-values below the 0.05 significance threshold. However, the system's lawful access from alternative devices did not show a significant relationship, indicated by a chi-square statistic of ($\chi 2$ (df) = 1.746, p = 0.120). Furthermore, the system provides users with clear instructions for navigation, input preparation, and outcome interpretation. In contrast, the chi-square test for other variables yielded a value of 0.000, suggesting that their correlation with the accuracy of information was statistically insignificant, supported by a p-value of 0.555.

4.4 Influence of Technological Determinants on HRIS Effectiveness

Based on the results from the model fitting, it has been determined that the data provided aligns well with the models used, indicating a significant relationship between at least one predictor and the response variable. However, the statistical analysis of Goodness-of-Fit indicates that the two models—timeliness and completeness—do not demonstrate an adequate fit, as indicated by a p-value of less than 0.05. The analysis of the remaining variables, particularly accuracy, reveals a significant p-value, suggesting that the model effectively captures the underlying data. However, the inclusion of technological determinants in the model did not significantly enhance its predictive capability. This is illustrated by the Nagelkerke pseudo-R-square values, which show only modest contributions: 0.250 for timeliness, 23.2% for completeness, and 27.8% for accuracy. Overall, these findings indicate that while the model performs reasonably well, the technological factors do not play a crucial role in predicting the outcomes.

Table 5: Relationship between Technological Determinants and Information Accuracy

Technological determinants	n%	Error Free Information (χ^2, p)	Reliable (χ^2, p)	Reality (χ^2, p)
System being changed/upgraded				
0. Strongly disagree	75(37)	3.404, 0.051	17.781, 0.289	9.315, 0.002
1. Strongly agree	126(63)			
System is legally accessed				
0. Strongly disagree	110(55)	0.647, 0.271	16.958, < 0.001	1.746, 0.120
1. Strongly agree	91(45)			
Provision of clear instruction	91(45)			
0. Strongly disagree	110(55)	8.130, 0.004	4.607, 0.022	0.000, 0.555
1. Strongly agree				
Procedures are clear and detailed				
0. Strongly disagree	109(54)	0.618, 0.281	12.820, < 0.001	5.143, 0.017
1. Strongly agree	92(46)			
HRIS reliably operated				
0. Strongly disagree	83(41)	4.867, 0.019	18.247, < 0.001	7.284, 0.005
1. Strongly agree	118(59)			
Information address the need	128(64)			
0. Strongly disagree	73(36)	0.001, 0.565	21.260, < 0.001	14.409, < 0.001
1. Strongly agree				
HRIS facilitates decision making				
0. Strongly disagree	145(72)	2.272, 0.093	5.985, 0.010	5.635, 0.013
1. Strongly agree	56(28)			

Source: Field Data (2024)

The findings indicate that various predictor factors significantly influence the effectiveness of HRIS within Local Government Authorities (LGAs). The analysis reveals a notable interaction between dependent and independent variables, with eight out of twelve factors being statistically significant in impacting HRIS efficiency. Key technological factors include timeliness, completeness, and accuracy. Timeliness is influenced by compatibility, complexity, and reliability; completeness is shaped by compatibility and usefulness; while accuracy is affected by complexity, reliability, and usefulness. The impact of these technological attributes varies, as indicated by the magnitude of the β coefficients and p-values.

The effectiveness of various elements is influenced by several key variables, which can be categorized based on three criteria: completeness, timeliness, and accuracy. For completeness, two significant variables were identified: usefulness, which had a strong influence ($\beta = 1.158$, $p = 0.000$), and compatibility, with a moderate impact ($\beta = 0.458$, $p = 0.009$). In terms of timeliness, complexity emerged as the most significant variable ($\beta = 0.791$, $p = 0.000$), followed by compatibility ($\beta = 0.571$, $p = 0.002$) and reliability ($\beta = 0.451$, $p = 0.017$). Finally, when evaluating accuracy, complexity ($\beta = 0.6$, $p = 0.007$) and reliability ($\beta = 0.523$, $p = 0.008$) were significant, along with usefulness ($\beta = 0.803$, $p = 0.001$). These findings highlight the importance of these variables in determining the overall efficacy of the elements assessed.

Table 6: Parameter Estimates for Technological Determinants

			Estimate	Std. Error	Wald	Df	Sig.	95% Confidence Interval	
								Lower Bound	Upper Bound
Timeliness	Threshold	[TIMELINESS = 1.00]	1.033	1.289	0.641	1	0.423	-1.495	3.56
		[TIMELINESS = 2.00]	4.704	1.004	21.965	1	0.000	2.737	6.671
		[TIMELINESS = 3.00]	7.362	1.077	46.699	1	0.000	5.25	9.473
		[TIMELINESS = 4.00]	9.977	1.177	71.808	1	0.000	7.669	12.284
	Location	Compatibility	0.571	0.183	9.776	1	0.002	0.213	0.93
		Complexity	0.791	0.212	13.878	1	0.000	0.375	1.207
		Reliability	0.451	0.189	5.722	1	0.017	0.081	0.821
		Usefulness	0.187	0.213	0.771	1	0.380	-0.23	0.604
Completeness	Threshold	[COMPLETENESS = 1.00]	2.616	0.963	7.387	1	0.007	0.73	4.503
		[COMPLETENESS = 2.00]	5.965	1.021	34.153	1	0.000	3.964	7.965
		[COMPLETENESS = 3.00]	7.165	1.051	46.435	1	0.000	5.104	9.225
		[COMPLETENESS = 4.00]	9.273	1.119	68.675	1	0.000	7.08	11.466
	Location	Compatibility	0.458	0.175	6.877	1	0.009	0.116	0.801
		Complexity	0.306	0.201	2.324	1	0.127	-0.088	0.7
		Reliability	-0.157	0.18	0.762	1	0.383	-0.509	0.195
		Usefulness	1.158	0.224	26.641	1	0.000	0.719	1.598
Accuracy	Threshold	[ACCURACY = 1.00]	1.431	1.326	1.164	1	0.281	-1.168	4.029
		[ACCURACY = 2.00]	6.244	1.107	31.82	1	0.000	4.075	8.414
		[ACCURACY = 3.00]	9.343	1.22	58.682	1	0.000	6.952	11.733
		[ACCURACY = 4.00]	12.186	1.358	80.481	1	0.000	9.524	14.848
	Location	Compatibility	0.241	0.187	1.672	1	0.196	-0.124	0.607
		Complexity	0.6	0.222	7.284	1	0.007	0.164	1.036
		Reliability	0.523	0.197	7.018	1	0.008	0.136	0.909
		Usefulness	0.803	0.231	12.072	1	0.001	0.35	1.256

Source: Field Data (2024)

4.5 Discussion

4.5.1 Distribution of Technological Determinants

The findings elucidate a complex landscape of technological attributes, demonstrating a diverse distribution across various regions, each marked by varying degrees of challenges associated with HRIS. These challenges are systematically categorized into three distinct levels: high, medium, and low. Notably, a significant trend was identified, wherein a considerable proportion of HROs expressed strong agreement regarding the compatibility of the HRIS. This positive sentiment was particularly evident in regions experiencing minimal HRIS challenges, specifically those classified within the low-problem category. Furthermore, an impressive 62.1% of respondents indicated confidence in the system's reliability, thereby reinforcing the favorable perception of the HRIS's performance in these less problematic environments. The concept of HROs is significant in low-risk regions, where individuals possess strong information and ICT skills. These skills enhance the perception of systems as reliable and beneficial. HRIS play a key role in improving ICT skills, allowing users to effectively manage databases and prevent data breaches. Therefore, HROs in areas with strong ICT competencies can utilize these systems more efficiently.

4.5.2 Relationship between Technological Determinants and Effectiveness of HRIS

The findings in Table 3 highlight a significant relationship between timeliness—defined as the relevance and currency of information—and key technological attributes. These include the system's adaptability to user needs, comprehensive guidance for navigation and input preparation, clear procedures that reduce ambiguity, and reliable implementation of the HRIS. The information provided aligns closely with user requirements, supporting effective decision-making and enhancing overall operational efficiency within the organization. The findings shown in table 3 reveal an important connection between timeliness, as indicated by the measured time, and several key factors. To begin with, having clear and well-structured procedures is crucial for achieving timely responses. Moreover, the reliable functioning of the HRIS within the district is essential to this relationship. Furthermore, ensuring that the information provided aligns with the users' needs significantly boosts timeliness. Additionally, the system's capacity to support effective decision-making processes contributes substantially. It's also worth noting that this system can be accessed legally from a variety of devices, providing users with flexibility and convenience. The results in table 3 demonstrate a strong connection between timeliness, defined as the ability to save time, and several influencing factors. These factors encompass the speed at which the system is updated or modified, the availability of clear instructions for users to utilize the system effectively, the quality of support in preparing inputs and interpreting outputs, the clarity and comprehensiveness of the procedures offered, and how well the information aligns with the users' needs.

Upon further analysis of the findings, it becomes evident that various aspects of timeliness, including the provision of up-to-date information, the efficiency of time captured, and the potential for saving time, show a strong and significant correlation with just two vital technological characteristics. These characteristics highlight two crucial points: firstly, the described processes exhibit a remarkable degree of clarity and detail, enabling users to navigate them effortlessly. Secondly, the information provided is customized to effectively meet the specific needs and requirements of the users, ensuring their individual concerns are thoroughly addressed. This high degree of clarity and the depth of information within the processes can be largely attributed to the availability of a well-structured user manual for the Human

Capital Management Information System (HCMIS), which serves as a valuable resource for users seeking to optimize their experience and efficiency.

Interviews conducted with HROs highlighted that the implementation and management of HRIS are guided by a comprehensive manual. This manual was originally developed by the President's Office - Public Service Management (PO - PSM) in 2011 and received an important update in 2016. This revision aimed to enhance the effectiveness of HRIS and ensure that the systems are utilized consistently and in alignment with established protocols within the public service sector URT, 2016). The perspective shared by the HR Officer from PO-PSMGG highlights how the HRIS effectively meets user needs. In a recent interview, the officer elaborated on the ways HRIS aids employees in LGAs by improving information management and handling processes. The officer emphasized the system's role in enhancing the efficiency and effectiveness of information flow for employees, ultimately benefiting overall organizational performance by precisely stating that:

"Our system has helped us to keep all records of employees including their monthly salary details. The system has helped us to store information on age, education level, salary package and position of the employee although other information like performance appraisals and trainings are still being stored using the old system: this is because the new system doesn't accommodate such information".

In addressing the impact of HRIS within LGAs, the officer outlined several notable advantages of the system. He asserted that HRIS has greatly improved their capability to track employee information, including their whereabouts, educational qualifications, and available job vacancies. Additionally, it has enhanced decision-making regarding employee transfers. The system also plays a vital role in monitoring employee behavior, ensuring that authorities are informed about issues such as disciplinary warnings. Overall, HRIS has demonstrated itself to be an invaluable asset for effective human resource management.

The results displayed in Table 4 highlight the relationship between two dimensions of comprehensive coverage and various technological attributes. Specifically, the data reveals a notable association between completeness—characterized as the sufficiency and thoroughness of information provided—and three key factors: first, the frequency with which rapid changes or upgrades are implemented within the system; second, the availability of clear and detailed instructions designed to empower users in effectively operating the system; and third, the system's capability to facilitate and enhance decision-making processes. The findings outlined in Table 4 highlight a noteworthy correlation between data completeness and two pivotal factors: 1) the frequency with which the system undergoes changes or upgrades, and 2) the ability of the information to adequately fulfill user demands. A detailed analysis of both tables reveals a compelling relationship between the degree of completeness of the data and the occurrence of system updates. Moreover, the information provided not only addresses user needs effectively but also enhances the decision-making process, underscoring the statistical significance of both variables involved.

The respondents demonstrated a prevailing belief in the HRIS capacity for facilitating rapid changes and upgrades, which can be linked to their experiences with the preceding paper-based system. Ishijima et al. (2015) identified significant deficiencies in the manual system, specifically regarding its output, which was characterized by sluggishness, inaccuracy, and overall inadequacy. The participants acknowledged that the adoption of HRIS has significantly reduced the burden placed on HROs, thereby enhancing operational efficiency. The process of updating employee information has evolved to become much more convenient, particularly in the public sector. This advancement has played a crucial role in overcoming a range of significant human resource management challenges that previously plagued the industry.

In the past, reliance on cumbersome paper-based systems contributed to various pressing issues. Among these were serious problems such as fraudulent activities within the public payroll system, which undermined trust and integrity. Additionally, the presence of unqualified civil officials created obstacles to effective governance, while delays in employee promotions hindered motivation and career progression. Furthermore, the lack of adequate training and development programs left many employees ill-equipped for their roles. As highlighted by Sawe and Maimu (2001), Jorojick (2015), Lameck (2015), and Matimbwa and Wole (2024), these challenges had become deeply rooted in the management practices of public institutions, but the shift towards more efficient systems is paving the way for meaningful improvements.

The findings indicate a robust correlation between various technological attributes and information accuracy, particularly regarding the provision of error-free data, as presented in Table 5. Furthermore, six attributes demonstrate a strong association with the accuracy of reliable information, while five attributes display a strong connection with the accuracy of real-world representation, also as referenced in Table 5. Notably, among the various technological determinants, the HRIS emerges as the sole system that has consistently exhibited reliable performance within the district. It is essential to emphasize that the HRIS has a significant correlation with all three dimensions of accuracy, thereby underscoring its critical role in effective data management. Accuracy can be understood as the level to which errors are nonexistent in the process of generating information (Top, 2015). In this regard, recent findings reveal that the challenges associated with internet connectivity issues that have been well-documented for their detrimental effects on the performance and reliability of HRIS have now been effectively resolved (Magenda, 2011; Jorojick, 2015). This improvement suggests a significant enhancement in the overall functionality of HRIS, enabling more reliable data management and fostering better decision-making within organizations.

4.5.3 Influence of Technological Determinants on HRIS Effectiveness in LGAs

In Table 6, the outcomes of three ordered logistic regression models are detailed, highlighting the impact of specific technological parameters on the effectiveness of HRIS in three critical areas: timeliness, completeness, and correctness. The analysis reveals that each model exhibits statistical significance, evidenced by p-values falling below the 0.05 threshold. Furthermore, the models are shown to align well with the data, as indicated by satisfactory performance in the descriptive goodness-of-fit test, confirming their reliability in assessing HRIS efficacy.

The parameter estimates displayed in table 6 provide valuable insights into the influence of each independent variable on the dependent variable. These estimates reveal not only the strength of each variable's impact but also the direction of that effect. Directionality is classified as either positive or negative, with the presence of a negative sign (-) in the β coefficient indicating a negative relationship, while its absence signifies a positive relationship. Specifically, a positive β coefficient suggests that the technological attribute under consideration contributes positively to the logit transformation of the dependent variable, highlighting its beneficial effect. This nuanced understanding allows for a clearer interpretation of how various technological factors shape the overall analysis. In analyzing three models involving twelve independent variables, it was found that eight of these factors are statistically significant and positively influence the effectiveness of HRIS in LGAs. When considering the aspect of timeliness, the key factors identified are compatibility, complexity, and reliability. Completeness, compatibility, and usefulness play crucial roles, while accuracy is determined by complexity, reliability, and usefulness. Overall, these factors are essential for enhancing HRIS performance within LGAs.

The extent of influence exerted by different technological attributes displays notable variability, underscoring their distinct roles in the overall framework. This variability is further illuminated through

a thorough statistical analysis, particularly evident in the substantial β coefficients that reflect the strength of each attribute's impact. Additionally, the p-values associated with these coefficients indicate a high level of significance, reinforcing the idea that these technological characteristics play a crucial and measurable part in shaping outcomes.

The study highlights the critical variables influencing the effectiveness of various elements within HRIS. For the element of completeness, the two most significant factors are usefulness, with a strong effect ($\beta = 1.158$, $p < 0.001$), and compatibility ($\beta = 0.458$, $p = 0.009$). In terms of timeliness, complexity emerges as the most impactful variable ($\beta = 0.791$, $p < 0.001$), followed by compatibility ($\beta = 0.571$, $p = 0.002$) and reliability ($\beta = 0.451$, $p = 0.017$). Accuracy is primarily influenced by complexity ($\beta = 0.6$, $p = 0.007$) and reliability ($\beta = 0.523$, $p = 0.008$), along with usefulness ($\beta = 0.803$, $p = 0.001$). These findings underscore the significant role of technological factors in enhancing the efficacy of HRIS, a perspective supported by previous research from scholars such as Ahmer (2013), Hien et al. (2014), Matimbwa, Shilingi, and Masue (2021), and Al-Mobaideen et al. (2013).

The HRO PO-PSMGG acknowledged the significant impact of technological advancements. He stated that the government plans to procure a new system designed to effectively meet the current operational requirements. This statement was made during an interview, in which the individual explicitly conveyed this intention by stating:

*"*We expect to adopt a new system by next year. The reason for this is twofold. Firstly, we purchased a system that was not suitable for us so the government, through its system specialists, is devising a means of coming up with a system that best suits us. Since we adopted a new system that captured a lot of unnecessary information, this time we are well prepared to store relevant information on especially employees whose information is insufficient compared to new employees who already found the system in place".

"Secondly, the current system is outdated since it doesn't have modern modules. The new system will certainly meet the requirements of the government".

5.0 CONCLUSION

The study examined the relationship between the efficacy of Human Resource Information Systems (HRIS) and their technological attributes within LGAs in Tanzania. Key findings highlighted a strong connection between attributes like timeliness, completeness, and accuracy with the effectiveness of HRIS. A positive correlation was found between timeliness and various technological components. Important factors for evaluating HRIS effectiveness include adaptability, user instructions, procedural clarity, reliability, alignment with user needs, and support for decision-making. The study concludes that integrating these attributes is crucial for achieving timely and relevant HRIS outputs.

The findings indicate a strong link between system completeness and the frequency of modifications, as well as alignment with user needs. The current system is notably more efficient than its paper-based predecessor. Moreover, there is a significant correlation between the reliable functioning of the HRIS and three components of accuracy: error-free information, reliability, and alignment with actual circumstances. This suggests that LGAs have made notable progress in resolving previous HRIS utilization issues. As part of the study, a comprehensive regression analysis was carried out to explore how various technological factors affect the effectiveness of HRIS. Utilizing an ordered logistic model for data analysis, the results revealed that all eight identified variables displayed positive coefficients. This indicates that the majority of the technological attributes considered significantly contribute to improving the timeliness, comprehensiveness, and accuracy of HRIS. Furthermore, the study identified eight specific technological determinants that exhibited a statistically significant influence on the overall effectiveness of HRIS, underscoring the critical role that technology plays in enhancing human resource management practices. To improve the effectiveness of HRIS in LGAs, it is essential to focus on several

key factors: utility, compatibility, intricacy, and dependability. This involves implementing timely changes or upgrades to the system, ensuring that it is user-friendly, establishing reliable operational procedures, and providing information that meets the specific needs of HROs. By addressing these areas, LGAs can enhance the efficiency and overall performance of their HRIS.

6.Implications of Findings

The findings indicate LGAs should focus on improving their adaptability by integrating technology that can be easily updated or modified. Achieving this goal requires the implementation of enhanced or revised systems. Additionally, it is crucial for LGAs to prioritize the relevance of the information they provide, ensuring it meets the specific needs of HROs. At present, the system is experiencing suboptimal utilization, with its primary function being the retention of data related to recent personnel acquisitions. The HRIS is tasked with storing a variety of reports that are critical for enhancing decision-making processes, supporting human resource planning, and facilitating the career advancement of employees. Despite these essential responsibilities, HROs have yet to comprehensively explore the additional functions available within the system. This situation underscores the need for the development of a system that empowers users to generate vital information to support effective decision-making.

References

Aggarwal, N., and Kapoor, M. (2012). Human resource information systems (HRIS)-Its role and importance in business competitiveness. *GianJyoti E-Journal, 1(2), 1-13.*

Ahmer, Z. (2013). Adoption of Human Resource Information Systems Innovation in Pakistani Organizations**.** *Journal of Quality and Technology Management***,** Volume IX, Issue II, Pp 25–50

Akoyo, S.I. and Muathe S.M.A. (2017). Towards a Theoretical Model for Human Resource Management Information Systems, Government Policy and Organizational Performance: A Research Agenda. *IOSR Journal of Business and Management (IOSR-JBM). Volume 19, Issue 1.pp 43-53.*

Akwei, I. (2017). Thousands of Tanzanian Civil Servants Sacked Over Fake Certificates. Africanews, April 28th, 2017. Retrieved on May 11th 2017 from http://www. africanews. com

Al-Dmour, R. H., and Zu'bi, M. F. (2014). Factors motivating and inhibiting the practice of HRIS in business organizations: An empirical analysis. *International Business Research, 7(7), 139.*

Al-Mobaideen, H., Allahawiah, S. and Basio, E. (2013). Factors Influencing the Successful Adoption of Human Resource Information System: The Content of Aqaba Special Economic Zone Authority. *Intelligent Information Management, 5*, 1-9.

Amrouni, K., and Arshah, R. (2018). Using UTAUT model to determine the Factors Affecting the Technology Acceptance in Judicial System Environment. *Journal of Advanced Research in Computing and Application Vol 11, no 1 pp 17-22.*

Basbas S, TetouVandPolitisI (2013). Ordinal and Binary Logistics Models for Examination of Behavioral, Infrastructure and Perception Factors Influencing Biking. *Conference paper*

Bhuiyan, M.B.U., and Rahman R (2014). Application of Human Resource Information System in the Firms of Bangladesh and its Strategic Importance. World Wide Research Vol 4 Issue 3.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology, MIS Quarterly, 13(3), 319-339.

Elamir E and SadeqH (2010). Ordinal Regression to Analyze Employees Attitude Towards the Application of Total Quality Management. *Journal of Applied Quantitative Methods, Vol 5 no 4*

Gupta B. (2013). Human Resources Information System HRIS. Important Element of Current Scenario.

Journal of Business and Management Vol 13, Issue 6 pp 41-46.

Hendrickson, A. (2004). Human resource information systems: backbone technology of contemporary human resources. Journal of Labour Research, 24(3), 381-394. *Journal of Studies in Social Sciences.*

Hickman, G. R., and Lee, D. S. (2001). Managing human resources in the public sector: a shared responsibility. Harcourt Brace.

Hien, L.T., Nguyen, T.L. and Cuong, P.H. (2014). Key Determinants of Information System Effectiveness – An Empirical Case in Lac Hong University. *International Journal of Information Technology and Business Management*, Vol.32 No.1

Iaccino, L. (2017. Tanzania Fires 10 000 Civil Servants Over Fake Qualifications. Newsweek, April 28th, 2017. Retrieved on May 11th 2017 from http://www.newsweek.com

Ishijima H, Mapunda M., Mndeme.,Sukums S., Mlay, VS. (2015). Challenges and opportunities for effective adoption of HRH information systems in developing countries: National rollout of HRHIS and TIIS in Tanzania. Human Resources Health. 2015; 13(48).

Jahan, S. (2014) Human Resources Information System (HRIS): A Theoretical Perspective. *Journal of Human Resource and Sustainability Studies*, **2**, 33-39

Jorojick D.P. (2015). The Influence of Human Resource Information System on Decision Making in LGAs: The Case of Lawson Version 9 in Kiteto District, Tanzania. A Dissertation Submitted in Partial/Fulfillment of the Requirements for Award of the Degree of Master of Science in Human Resource Management (MSc HRM) of Mzumbe University.

Kassam, A. (2013). Challenges of Human Capital Management Information System (Lawson Version, 9) in Local Government Authorities: The case of Shinyanga Municipal Council. A Dissertation for Award of MSc Degree at Mzumbe University, Morogoro, Tanzania. 100pp.

Kassim, N., Ramayah, T. and Kurnia, S. (2012). Antecedents and outcomes of human resource information system (HRIS) use. *International Journal of Productivity and Performance Management, 61(6), 603-623.*

Keegan, A., Huemann, M., & Turner, J. R. (2012). Beyond the line: exploring the HRM responsibilities of line managers, project managers and the HRM department in four project-oriented companies in the Netherlands, Austria, the UK and the USA. *The International Journal of Human Resource Management, 23(15), 3085-3104.*

Kroenke, D. M. (2014). MIS Essentials (4th Ed.). Upper Saddle River, NJ: Pearson.

Lameck, W.U. (2015). Explaining the Performance of Decentralized Recruitment in Tanzania Local Government Authorities on Institutional Context Perspective. *International Journal of Academic Research in Business and Social Sciences Dec 2015, Vol. 5, No. 12.*

Lema, L.E. (2013). The Impact of Human Resources Information System in the Performance of Banking Industry: The Case Study of National Microfinance Bank Tanzania Ltd. Dissertation Submitted in Partial Fulfillment of Requirements for the Award of the Degree of Masters of Science in Human Resources Management of Mzumbe University.

Materu, B. (2017). Tanzania Fake Workers Ordered to Leave by May 15. The East African, April 29th, 2017. Retrieved on May 11th 2017 from http://www.the eastafrican.co.ke

Matimbwa H and Masue O S. (2019).Usage and Challenges of Human Resources Information System in Tanzanian Public Organizations. *Journal of Human Resource Management Vol 7, No 4, pp 131-137.*

Matimbwa, H., & Olatokun, W. (2023). Influence of User Characteristics on the Effectiveness of LGAs' Human Resource Information System in Tanzania. *East African Journal of Management and Business Studies, 3(1), 79-92.*

Matimbwa, H., & Masue, O. S. (2020). The Influence of Organizational Factors on Human Resource Information System Effectiveness in The Tanzanian Local Government Authorities. *ICTACT Journal on Management Studies, 1263-1272.*

Matimbwa, H., Shilingi, V., & Masue, O. (2021). User characteristics and effectiveness of human resource information system (HRIS) in the Tanzanian local government authorities. *Journal Of Co-operative and Business Studies (JCBS), 6(1).*

Matimbwa H and Wole O (2024). Human Capital Management Information System. Scope of Application and Challenges facing public sector in Tanzania. Regional Journal of Information and Knowledge Management Vol 9(1)

Mohammad H, Torabi S and Dogani A (2015) Application of Ordered Logit Model in Investigating the Factors Affecting Peoples Income A case of Tehran City. *International Journal of Academic Research in Economics and Management Sciences Vol. 5, No. 3*

Mustafa, M. M. (2009). Local government in Tanzania does the local government law in Tanzania give autonomy to local government (Doctoral dissertation).

Njau, N. F. (2018). Factors influencing adoption of human resource information system in parastatal organizations; case of Dar es Salaam. A Dissertation for Award of MSc Degree at Dodoma University, Dodoma, Tanzania.

Njau, S. (2017). Challenges in the Use of Human Capital management Information System (HCMIS) in Local Government Authorities. A Dissertation for Award of MSc Degree at Mzumbe University, Morogoro, Tanzania.

Pallant, J. (2005). SPSS Survival Manual: A step by step guide to data analysis using SPSS for Windows (Version 12).Crows Nest, NSW: Allen & Unwin.

Sawe, D. and Maimu, D. (2001). International experience with civil service censuses and civil service databases. A case study 3 - Tanzania. In McCallum, N., & Tyler, V. (2001). London: International Records Management Trust.

Singh, H.P, Jindal, S. and Samim, S.A. (2011).Role of Human Resource Information System in Banking Industry of Developing Countries. Paper presented in The First International Conference on Interdisciplinary Research and Development, 31 May - 1 June 2011, Thailand.

Tagoe, M. (2012). Students' perception on incorporating E-learning into teaching and learning at University of Ghana. *International Journal of Education and Development using Information and Communication Technology* Vol 8, Issue 1, pp 91-103.

Troshani, I., Jerram, C. and Hill, S.R., (2011). Exploring the public sector adoption of HRIS. Industrial Management & Data Systems, 111(3), 470-488.

United Republic of Tanzania (URT). (2016a). Human Capital Management Information System (HCMIS) User Manual (2016). President's Office, Public Service Management. Government printer, Dar es Salaam.

Venkatesh Y., M.G. Morris, G.B. Davis and Davis F.D. (2003). "User acceptance of information technology: toward a unified view". *MIS Quarterly Vol.27 (3), 425-78.*

World Bank (2002). Evidence-Based Governance in the Electronic Age. Case Study Personnel and Payroll Records and Information Systems in Tanzania. A World Bank/International Records Management Trust Partnersh