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Original Article

### Assessing the Effectiveness of Human Capital Management Information Systems (HCMIS) in Employee Record-Keeping: A Case Study of Public Institutions in Dodoma, Tanzania

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*HCMIS,  
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HR Digitalization.*

Efficient employee record-keeping is essential for effective human resource management, ensuring data accuracy, accessibility, and compliance with organisational policies. In Tanzania, public institutions have adopted Human Capital Management Information Systems (HCMIS) to streamline HR operations, yet concerns remain about its effectiveness, efficiency, and challenges in practice. Despite previous research on HR digitalisation, there is a lack of empirical evidence on how HCMIS enhances or hinders employee record-keeping in Tanzanian public institutions, creating a critical knowledge gap. This study aimed to assess the effectiveness, efficiency, and challenges of HCMIS in TRA, TANESCO, Dodoma City Council, and DUWASA. Using a mixed-methods approach, data was collected from 126 respondents through structured questionnaires and 30 through interviews and analysed using descriptive statistics, correlation analysis, and thematic analysis. The findings revealed that HCMIS moderately improves employee record management, particularly in personal information tracking and retrieval speed, but struggles with performance monitoring, training records, and integration with payroll systems. Frequent system downtime, resistance to change, and inadequate training were major challenges affecting adoption. The study confirms that system reliability significantly enhances record retrieval efficiency, while poor integration increases errors. These results have practical implications for policymakers and HR professionals, emphasising the need for enhanced system integration, infrastructure upgrades, continuous training, and improved technical support. Addressing these challenges will enable public institutions in Tanzania to fully optimise HCMIS for accurate, efficient, and secure employee record-keeping.

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## INTRODUCTION

Effective employee record-keeping is a core component of human resource management, as it provides accurate and timely information essential for informed decision-making, regulatory compliance, and performance evaluation. According to Sikira and Mishael (2024), the use of Human Resource Information Systems (HRIS) in managing personnel records significantly enhances organizational efficiency and supports strategic HR functions. In Tanzania, manual record-keeping systems have continued to be the most preferred method of data storage (Mbowe, 2018). Information technology in record keeping is gaining popularity through the integration of Human Capital Management Information Systems (HCMIS) because it automates the data storage, retrieval, and processing operations while improving the accessibility of information for human resource management (Sikira & Mishael, 2024). Nevertheless, there seems to be controversy about whether or not the HCMIS assists with employee record-keeping for human resource managers, which calls for more research.

Research shows that HCMIS greatly improves employee record management on a global scale

through automation, decreasing errors, and enhancing data retrieval (Deloitte, 2019; Mercer, 2020). In the African region, organisations that have embraced HCMIS note improvements such as better compliance with labour laws and higher data accuracy (PricewaterhouseCoopers [PwC], 2019). In Tanzania, the government has initiated systems like the Integrated Government Human Resource Information System (IGHRIS) to support the use of Human Capital Management Information Systems (HCMIS) across the public sector. These efforts aim to improve transparency, efficiency, and integration of HR data (Matimbwa & Olatokun, 2024). Nonetheless, some factors, including poor infrastructure, unwillingness to accept new information, and insufficient training for users, have prevented fully realising the system's advantages (Mwansasu & Tarimo, 2019).

Regardless of the noted benefits, literature about the effectiveness of HCMIS in public institutions in Dodoma, Tanzania, is scarce. There are previous studies which provided general adoption trends of information systems and did not analyse how HCMIS improves record-keeping efficiency in institutions such as the Tanzania Revenue Authority (TRA), Tanzania Electric Supply Company Limited

(TANESCO), Dodoma City Council, and Dodoma Urban Water Supply and Sanitation Authority (DUWASA) (Maganga, Mjema, & Mshana, 2020). Also, worries about data theft, system outages, and lack of sufficient education cast doubt about whether HCMIS optimised employee record management within these institutions Mbaga, 2020. This study, therefore, intends to fill this gap by analysing the impacts of HCMIS on employee record-keeping in these prominent public institutions in Dodoma.

Using appropriate information systems ensures that public institutions handle and manage employees efficiently for compliance and decision-making purposes Matimbwa and Olatokun, 2024). However, many organisations in Tanzania still manage their records manually, which leads to inaccuracy, delays, and loss of data Mbowe, 2018. Even though HCMIS was designed to address these issues, its adoption by public institutions has been constrained by inadequate infrastructure, data fragmentation, and unwelcoming attitudes toward new ideas Msigwa, 2020. While many public institutions in Dodoma are said to be using HCMIS, there is no evidence to show that these institutions have improved record-keeping; thus, need to assess the system's usefulness.

This study, therefore, intends to fill this gap by evaluating the effectiveness of HCMIS on employee record-keeping in these prominent public institutions in Dodoma. Understanding how HCMIS functions in these organisations will provide valuable insights into the public sector's current state of information systems and highlight areas requiring improvement. To guide this evaluation, the study specifically seeks to address three specific objectives: (1) to assess the effectiveness of different record categories within HCMIS in supporting employee record-keeping; (2) to analyse the efficiency of employee record management processes; and (3) to examine the key challenges that facing the effectiveness of HCMIS on employee record keeping. These objectives are

underpinned by Information Systems Theory (IST), which provides a conceptual framework for understanding how technology influences organisational productivity and efficiency. The theoretical literature review, therefore, draws on IST to explore the potential of HCMIS in transforming employee record-keeping practices in public institutions.

According to IST, technology systems like HCMIS are critical for managing data in control operations, improving decision-making, and increasing productivity (Melville, Kraemer, & Gurbaxani, 2004). DeLone and McLean (2003) remark that adopting information systems relies on certain organisational goals, infrastructure, and user skills. In Public Sector Institutions in Tanzania, HCMIS is believed to improve the maintenance of staff records by automating record-keeping processes and eliminating inefficiencies (Msigwa, 2020). However, as cited by IST, other factors like reluctance to change the status quo, lack of proper government infrastructure, and system integration problems can make such systems unusable (Mbaga, 2020). The socio-technical view of IST also points out the duality of humans and technology in such a complex system; hence, to fully employ HCMIS, public institutions have to simultaneously upgrade their systems and train the users (Lee et al., 2015). Hence, IST is applicable in analysing the operation of HCMIS in public institutions of Tanzania and what determines its effectiveness.

## LITERATURE REVIEW

This part analyses the theoretical and empirical literature concerning using the Human Capital Management Information System (HCMIS) for employee record management. The theoretical review used Information Systems Theory (IST) to elaborate on technology's role in facilitating human resource management functions. In contrast, the empirical review concerned previous research reports on adopting HCMIS and its effectiveness and problems in various organisational settings.

## Theoretical Literature Review

Examining the role of Human Capital Management Information Systems (HCMIS) in employee record-keeping through the prism of Information Systems Theory (IST) sheds light on information systems' role in organisational efficiency and effectiveness. Technology-based systems like HCMIS offer better data management, decision-making, and operational effectiveness (Melville, Kraemer, & Gurbaxani, 2004). The theory also suggests that adopting an information system is only possible if it meets specific criteria set by the organisational goals, infrastructure, and user competencies (DeLone & McLean, 2003). In public organisations in Tanzania, HCMIS is said to improve record-keeping through automation and eliminating unnecessary steps (Msigwa, 2020). Nevertheless, some of the proposed changes may result in change resistance, lack of adequate infrastructure, and failure to integrate these systems, which can reduce the effectiveness of such systems (Mbaga, 2020). The socio-technical approach to Information Systems Theory also emphasises the direct and indirect effects of people and technologies, which suggests that public institutions should make system enhancements and user training for HCMIS to work (Lee et al., 2015). In summary, IST explains why HCMIS is ineffective in Tanzanian public institutions and the contextual factors responsible for its failure.

## Empirical Literature Review

Several publications have researched the use of Human Capital Management Information Systems (HCMIS) to improve employee record management in various types of organisations.

According to the research findings by Deloitte and Mercer, HCMIS enhances data accuracy, automates HR functions, and cuts down operational expenditures (2019, 2020). In Europe, for example, KPMG conducted a 2019 study that revealed that 72% of organisations implemented HCMIS. Out of this, 63% reported improved accuracy and

efficiency concerning employee records. Pricewaterhouse Coopers showed the same in Africa, where 57% reported lower errors and 47% reported improved data accuracy and better legal compliance. Such findings further strengthen the argument that HCMIS adoption can greatly enhance HR functions and management of employee records.

TCRA shows in their report in 2019 how organisations that have adopted HCMIS have had better record-keeping processes, although only 30% of organisations had adopted HCMIS at the time. They reported improved compliance with labour laws due to reduced errors by 25%. In 2020, the National Bureau of Statistics found data accuracy and completeness to increase by 35% and 40%, respectively. These organisations were all using HCMIS. Still, some issues are unsolved.

Matimbwa & Masue (2019) and Marcel & Tefurukwa (2023) claimed that insufficient IT infrastructure, system integration problems, and unfurnished user training were primary hindrances to the effective execution of the HCMIS. Following suit, Mwansasu and Tarimo (2019) argued that only thirty per cent of employees in public institutions utilised the HCMIS due to a lack of awareness of the system and insufficient training being two major contributing factors.

Alongside these studies, there is still quite a gap in research when it comes to analysing the use of HCMIS in public institutions in Dodoma, Tanzania, like the Tanzania Revenue Authority (TRA), Tanzania Electric Supply Company Limited (TANESCO), Dodoma City Council, and the Dodoma Urban Water Supply and Sanitation Authority (DUWASA). Earlier research has looked at HCMIS implementation as a whole, but no known studies focus on the specific institutions, their user adoption rates, and how the system affects operational efficiency and data security. This is why these key public institutions in Dodoma will be the focus of this study regarding HCMIS effectiveness in employee record-keeping.



## METHODOLOGY

This research had a cross-sectional design and utilised a mixed approach that combined quantitative and qualitative data collection methods to determine how effective Human Capital Management Information Systems (HCMIS) are in the record-keeping of employees.

The investigation was carried out in Dodoma, Tanzania, and involved TRA, TANESCO, Dodoma City Council, and DUWASA within the region. To estimate the quantitative sample size, the study used the Cochran (1977) formula for a known population, which is:

$$n = \frac{Z^2 p(1 - p)}{e^2}$$

Where  $Z=1.96$  (for a confidence level of 95%),  $p=0.5$  (assumed proportion), and  $e=0.1$  (10 per cent margin of error). This resulted in a sample of 96 respondents (General employees) for the quantitative survey. In addition, 30 key informants (HR officers, IT Officers, and Senior managers) were purposefully sampled for qualitative interviews, making the total qualitative sample 126 respondents. General employees were sampled using stratified random sampling for equal distribution across the divisions, while purposive sampling was applied to key informants possessing HCMIS knowledge (Msigwa, 2020).

Data collection employed closed and open-ended questionnaires and semi-structured interviews to gain a broader understanding (Maro & John, 2023). Reports and studies conducted on HCMIS within the region further enabled the context of the analysis.

Descriptive statistics (frequencies, percentages) and inferential analysis (correlation tests) were conducted using SPSS version 20 alongside relative research to analyse quantitative data (Msigwa, 2020). A thematic analysis was done for the

qualitative data concerning interviews, with particular attention paid to HCMIS effectiveness, challenges, and user adoption (Mbaga, 2020). Results were displayed in tables, pie charts, and line graphs. A preliminary questionnaire test was administered for accuracy and consistency, while triangulation was done to verify the data obtained from various sources (Kothari, 2004). Ethical principles entailed obtaining consent, appropriate anonymity and confidentiality numbers as presented in (Mwansasu & Tarimo, 2019). This approach of combining quantitative and qualitative methods enabled the study to comprehensively and systematically assess the effectiveness of HCMIS in public institutions in Dodoma, Tanzania. Outlining principal findings and discussing their significance to the existing knowledge The primary findings of the research are focused on the effectiveness of the HCMIS in managing employee records at TRA, TANESCO, Dodoma City Council, and DUWASA. The attention was concentrated on systems of managing records and their impact on employee record management, efficiency of record management and other related difficulties. The researcher utilised a scale of 1 to 5 for agreeing and disagreeing on different parameters to measure the effectiveness of HCMIS, where one is Strongly Disagree and five is Strongly Agree. Additionally, interviews were conducted with key informants in the areas of study to obtain the needed information.

## FINDINGS AND DISCUSSIONS

This section presents and analyses the findings regarding the effectiveness of Human Capital Management Information Systems (HCMIS) in employee record-keeping within TRA, TANESCO, Dodoma City Council, and DUWASA. The analysis focused on the categories of records and their effects on employee record keeping, efficiency of employee record keeping and challenges involved. Data was collected using a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) to assess different aspects of HCMIS effectiveness.

Also, the interview was conducted with key informants to collect relevant information.

### Effectiveness of Different Record Categories of HCMIS in Employee Record-Keeping

Analysis and findings on the impact of varying record categories on employee record keeping have been reported in Table 1. Some of the findings were based on the interviews conducted, while others were based on surveys reported quantitatively.

**Table 1: Effectiveness of HCMIS Record Categories in Employee Record-Keeping**

Measurement Item	Mean	Std. Deviation
Employee Personal Information Management	3.24	1.08
Employment History Tracking	3.00	1.17
Performance and Appraisal Data Management	1.64	1.10
Training and Development Records	2.17	0.82
Compensation and Benefits Information	2.31	1.18
Record Retrieval Efficiency	3.58	1.05
Data Accuracy and Integrity	3.42	1.09
System Integration with HR Functions	2.76	1.15
User-Friendliness and Accessibility	2.90	1.12
Overall Satisfaction with HCMIS	3.10	1.14

### Presentation of Findings

Moderate effectiveness (= 3.24) for managing employee personal information and employment history is reported with HCMIS. Its performance in managing training and development records (2.17) and compensation and benefits information (2.31) is also below average. Performance and appraisal data management is rated the lowest (1.64), indicating major gaps in tracking employee performance.

Conversely, participants gave relatively high scores for record retrieval efficiency (3.58) and data accuracy (3.42), implying that HCMIS enhances record accessibility and minimises errors. Meanwhile, the low scores given to system integration (2.76) and user-friendliness (2.90) point to difficulties in usability and integration with other HR services.

These results are consistent with Information Systems Theory (IST), which claims that information systems should facilitate data storage, retrieval, and accuracy while minimising waste (DeLone & McLean, 2003). The moderate effectiveness of HCMIS in personal information management and record retrieval corroborates IST that system efficiency is a function of the level of

structuring and processing information (Melville, Kraemer, & Gurbaxani, 2004). On the other hand, the low ratings in performance and appraisal data management (1.64) and training and development tracking (2.17) suggest that HCMIS is poor in performing dynamic HR processes, which is a major limitation discussed in the literature (Lee, Sambamurthy, Lim, & Wei, 2015).

Further evidence can be gathered from empirical studies. In a study conducted by Deloitte (2019), it was found that 72% of organisations that implemented HCMIS reported improvement in record retrieval and accuracy, which is in line with the high scores given to record retrieval efficiency (3.58) and data accuracy (3.42) in this study.

In line with the findings presented here, PwC (2019) also uncovered that performance monitoring and training administration were among the weakest spots in HCMIS utilisation, implying that several systems are missing adequate features for performance evaluations and employee growth monitoring. Moreover, a study by Msigwa (2020) from Tanzania revealed that 60% of his respondents from public sectors in HCMIS reported having problems with integration, which was consistent

with the low system integration score (2.76) in this study.

The qualitative data from interviews supports the other study's results on HCMIS user experiences and issues. One of the HR officers said,

*"In terms of storing employee personal information, the system works well, but performance tracking is an area it does not handle effectively. We still use paper-based appraisals."*

Another stated,

*"Retrieving records is easier now, but the system has a problem of crashing which makes it unreliable especially when urgent data is needed."*

Moreover, a senior IT officer at DUWASA had issues regarding integration and stated,

*"Compensation records are not automatically updated because HCMIS does not integrate fully with our payroll system, so I have to update them manually, which takes much time."*

These comments affirm the inadequacies in the performance management cycle, system

integration, and overall system usability, which explains the lower ratings from the survey results.

Organisations need to improve the system features, specifically performance evaluation and training cataloguing, to enhance the functionality of HCMIS.

Moreover, improving the system's integration with other HR functions will further automate processes and increase efficiency. Training sessions for regular users should be established to reduce system dependency and the need for external HR systems. With those changes, HCMIS should be able to automate employee record-keeping at public institutions in Tanzania.

### Efficiency of Employee Record-Keeping

This section evaluated various efficiency parameters such as speed of record retrieval, cost-effectiveness, accuracy, and dependability of the system. The results are outlined in Table 2, which is subsequently discussed in detail with supporting quantitative and qualitative literature. In addition, qualitative interview data were used to cross-check the quantitative data.

**Table 2: Effects of HCMIS on the Efficiency of Employee Record-Keeping**

Measurement Item	Mean	Std. Deviation
Time Taken to Retrieve Employee Records	3.81	1.05
Reduction in Record-Keeping Costs	3.42	1.09
Minimisation of Errors in Employee Records	3.19	1.14
Improvement in Overall Efficiency	3.64	1.07
Streamlining of HR Processes	3.55	1.10
System Reliability and Downtime Reduction	2.90	1.12
Integration with Payroll and Other HR Systems	2.76	1.15
User Confidence and Adoption Rate	3.00	1.14

HCMIS appears to have improved record-keeping efficiency, particularly regarding retrieval speed, which averaged 3.81, cost control at 3.42, and general efficiency at 3.64. The remaining averages, including error minimisation at 3.19 and streamlined HR processes at 3.55, suggest that

HCMIS has improved the inefficiencies of employee data management.

The participants rated system reliability (2.90) and integration with payroll and other HR systems (2.76) the lowest, indicating weaknesses in system

functional performance and compatibility with other organisational activities.

The findings support Information Systems Theory (IST), which posits that efficient information systems must improve data accessibility, decrease the possibility of making mistakes, and enhance organisational processes (DeLone & McLean, 2003). The high rating of record retrieval efficiency (3.81) confirms IST's claim that automated systems improve accessibility to data (Melville, Kraemer, & Gurbaxani, 2004). The improvement in accuracy, which in this case denotes the reduction in errors (3.19), also supports IST regarding the system's efficacy in decision-making (Lee, Sambamurthy, Lim, & Wei, 2015).

These findings are also supported by empirical evidence. Deloitte (2019) reported that organisations that implemented HCMIS had their time to access employee records decrease by 50%, which is in line with this study's results of record retrieval speed (3.81). Similarly, a PwC (2019) survey identified a 30% reduction in HR operational costs due to HCMIS, which correlates with this study's cost reduction score of 3.42. Still, the lower score for system reliability (2.90) and integration (2.76) is consistent with Msigwa's (2020) findings, which showed that numerous public institutions in Tanzania experienced system downtimes and challenges in integrating HCMIS with payroll systems.

Although HCMIS increases efficiency, its full potential is capped by a lack of technical and infrastructural support.

The interviews with HR officers and IT staff corroborate the other estimates and provide additional information on how HCMIS has improved efficiency and created some system-related challenges.

One HR officer said,

*"It now takes us minutes instead of hours to retrieve employee records. This has greatly enhanced our workflow."*

Another respondent pointed out the benefits more broadly by saying,

*"We have spent less money due to reduced use of paper and manual record keeping."*

Yet, system dependability and integration issues concern others. As one TANESCO IT specialist explained,

*"The system sometimes hangs, particularly when multiple users try to access the system simultaneously. This makes real-time data retrieval impossible."*

An HR officer at DUWASA also stated,

*"HCMIS does not completely integrate with our payslip system, which requires us to change salary information manually."*

These qualitative responses justify the lower reliability (2.90) and integration (2.76) scores for the system in the survey. It is pretty clear that while HCMIS increases efficiency, system stability and integration problems limit the advantages to a great extent. In order to achieve optimum efficiency with HCMIS, it is recommended that organisational HCMIS infrastructure funds be directed to the system's infrastructure to improve the downtime and increase the reliability of the whole system.

Integrating payroll and other human resource functions will streamline data transfer with minimum manual actions required. Moreover, periodic training needs to be provided to build confidence and acceptance among users so they can use the system easily. Solving these problems would allow government agencies to utilise the HCMIS for employee record management fully.



### Challenges Facing the Effectiveness of HCMIS on Employee Record-Keeping

The subsection analysed system use, servicing, data protection, and other integration challenges. The

results are presented in Table 3 with a discussion combining quantitative and qualitative literature. Also, quantitative results are enriched by qualitative comments from the interview.

**Table 3: Challenges Facing the Effectiveness of HCMIS**

Measurement Item	Mean	Std. Deviation
Resistance to Change Among Staff	3.81	1.05
Inadequate IT Infrastructure	3.72	1.09
Data Security Concerns	3.55	1.07
Limited System Integration	3.48	1.10
Lack of Regular System Upgrades	3.32	1.12
Insufficient Training on HCMIS Usage	3.76	1.08
System Downtime and Reliability Issues	3.61	1.09
Lack of Technical Support	3.44	1.14

Also rated highly were inadequate IT infrastructure (3.72) and insufficient training (3.76), meaning that a lack of technical knowledge prevents full system utilisation. Users' lack of faith in the system's security and reliability accounts for data security concerns (3.55) and system downtime (3.61). Furthermore, HCMIS effectiveness is limited by a lack of system integration (3.48) and technical support (3.44).

These results fit within the Information Systems Theory (IST) framework that affirms successful system implementation relies on adequate infrastructure, training, and dependability (DeLone & McLean, 2003). Change resistance is high (3.81) further supports IST, as users being comfortable with a system's effectiveness is necessary (Melville, Kraemer & Gurbaxani, 2004). Insufficient training (3.76) and poor infrastructure (3.72) also support IST which claims teleological adoption is low if users do not possess adequate skills or technical support (Lee, Sambamurthy, Lim & Wei, 2015).

Observational studies back these findings. Deloitte's 2019 study shows how over half of the organisations (54% to be exact) had issues with employee resistance towards accepting the HCMIS program, which perfectly coincides with the resistance score of 3.81 from this study. PwC (2019) also claimed that lacking information technology

infrastructure was a major hindrance in Africa, corresponding with the 3.72 score in this research. A study by Msigwa (2020) demonstrated that 70% of public institutions in Tanzania reported having issues with systems downtime and integration, which supports the system downtime score of 3.61 in this study. The overall conclusion is that adding HCMIS is severely obstructed due to resistance, lack of training, and infrastructure, which greatly decrease effectiveness.

The HR and IT staff detailed the problem they experienced with HCMIS and its implementation. An HR officer put it this way:

*"Some workers would rather keep records manually because they do not believe the system is trustworthy. They think that digital records can be misplaced and lost so easily."*

Another respondent spoke about the lack of infrastructure and said:

*"There are times when the Internet connectivity is poor, and the computers are old. These factors slow the system down, making it unreliable at times."*

A senior IT officer at TANESCO commented on the lack of training and noted that there are gaps:

*“Most of the staff did not attend adequate HCMIS training sessions. They end up not using the system to its potential, leading to many mistakes and unhappiness.”*

These barriers and the responses provided still prove that there is significant resistance to change, issues with the infrastructure, and insufficient training is provided, which justifies the quantitative results.

In order to tackle such issues, governmental organisations need to spend more resources on change management programs with a clear focus on the advantages of HCMIS for higher user acceptance. Enhancing the IT infrastructure through better hardware and a reliable internet connection can improve the system's performance. Furthermore, employees must be adequately trained

to use HCMIS, which requires designing and implementing training programs. If and when public institutions in Dodoma address these concerns, they will be able to automate the employee record files and enhance the overall functionality of HCMIS.

### The Study's Correlation Analysis

This subsection analyses the correlation of major factors related to the use and effectiveness of HCMIS in employee record filing. The research uses HCMIS productivity correlational factors and determines the strength of their relations by using Pearson's correlation coefficient measurement correlation. The analysis covers the relationship between training on HCMIS and usage of the system, system integration and minimisation of errors, and system integration and retrieval of records. The output is summarised in Table 4.

**Table 4: Pearson Correlation Coefficients**

Variables	Record Retrieval Speed	Data Accuracy	System Reliability	Time Taken to Retrieve Records	System Downtime	Error Minimisation
Record Retrieval Speed	1	<b>0.589 (**)</b>	0.421	<b>-0.573 (**)</b>	0.312	0.344
Data Accuracy	<b>0.589 (**)</b>	1	0.398	0.287	-0.291	<b>0.482 (**)</b>
System Reliability	0.421	0.398	1	<b>-0.612 (**)</b>	<b>-0.487 (**)</b>	<b>0.529 (**)</b>
Time Taken to Retrieve Records	<b>-0.573 (**)</b>	0.287	<b>-0.612 (**)</b>	1	<b>0.478 (**)</b>	-0.299
System Downtime	0.312	-0.291	<b>-0.487 (**)</b>	<b>0.478 (**)</b>	1	<b>-0.567 (**)</b>
Error Minimisation	0.344	<b>0.482 (**)</b>	<b>0.529 (**)</b>	-0.299	<b>-0.567 (**)</b>	1

(Note:  $p < 0.01$ , indicating significant correlations)

The results indicate a moderate positive correlation ( $r = 0.589$ ,  $p < 0.01$ ) between record retrieval speed and data accuracy, suggesting that faster access to employee records improves data accuracy. This finding supports Information Systems Theory (IST), which states that efficient digital systems reduce errors by ensuring timely data retrieval and updates (DeLone & McLean, 2003). Similarly, a

study by Deloitte (2019) found that organisations with well-functioning HCMIS experienced a 40% reduction in data entry errors due to faster record access.

A strong negative correlation ( $r = -0.612$ ,  $p < 0.01$ ) exists between system reliability and the time taken to retrieve records, indicating that a more reliable

system significantly reduces retrieval time. This aligns with the empirical findings of PwC (2019), which reported that HCMIS downtime in African public institutions led to inefficiencies in accessing employee records. IST also suggests that system reliability is a key determinant of efficiency, explaining why institutions with well-maintained HCMIS experience quicker and more effective record retrieval (Melville, Kraemer, & Gurbaxani, 2004).

A moderate negative correlation ( $r = -0.567$ ,  $p < 0.01$ ) is found between system downtime and error minimisation, implying that frequent system failures increase the likelihood of record-keeping errors. This supports Msigwa (2020), who reported that many Tanzanian public institutions faced data inconsistencies due to unreliable HCMIS functionality. As IST highlights, system stability is crucial for maintaining data accuracy and minimising manual corrections, reinforcing the need for frequent upgrades and maintenance to prevent errors.

The correlation analysis highlights key areas for improving HCMIS performance in public institutions. Enhancing system reliability through upgrades and maintenance will reduce retrieval time and improve efficiency. Improving infrastructure and server stability will help reduce system downtime, minimising errors and ensuring accurate record-keeping. Training HR personnel on HCMIS best practices will also enhance data accuracy and retrieval speed. Addressing these factors will enable public institutions in Tanzania to optimise HCMIS for effective employee record-keeping fully.

## CONCLUSION AND RECOMMENDATIONS

This study assessed the effectiveness, efficiency, and challenges of Human Capital Management Information Systems (HCMIS) in employee record-keeping within public institutions in Dodoma, Tanzania, focusing on TRA, TANESCO, Dodoma City Council, and DUWASA. The findings indicate that HCMIS has moderately improved record-

keeping effectiveness, particularly in personal information management and record retrieval speed, but struggles with performance tracking, training records, and compensation data management. Regarding efficiency, the system has enhanced accessibility, reduced administrative costs, and minimised errors, but challenges such as frequent system downtime, integration issues, and infrastructure limitations hinder its full potential. The study also found a strong correlation between system reliability and record retrieval efficiency, highlighting the importance of system stability. Moreover, resistance to change, insufficient training, and technical support gaps emerged as major barriers to adoption. These challenges reflect broader issues in digital transformation and HR technology adoption within Tanzanian public institutions. Thus, while HCMIS has contributed positively to employee record-keeping, its full benefits are yet to be realised due to technical, operational, and organisational challenges.

Several strategic improvements should be implemented to maximise the effectiveness of HCMIS in public institutions. First, enhancing system integration with payroll, performance tracking, and training modules will ensure comprehensive and seamless HR data management, reducing manual interventions. Second, improving IT infrastructure—server capacity, internet stability, and cybersecurity measures—will help address system downtime and data security concerns. Third, regular HCMIS training programs should be introduced to equip employees with the necessary skills to use the system efficiently, addressing resistance to change and improving adoption rates. A dedicated technical support team should also be established to resolve system issues promptly and provide continuous user assistance. Lastly, government agencies and policymakers should allocate adequate funding and resources to sustain system maintenance, upgrades, and long-term digital HR transformation initiatives. By addressing these challenges, public institutions in Dodoma and across Tanzania can fully harness the

potential of HCMIS for accurate, efficient, and secure employee record-keeping.

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