Human capital management information system: scope of application and challenges facing the public sector in Tanzania

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Abstract

Rationale of Study – Human Capital Management Information Systems (HCMIS) play a crucial role in facilitating decision-making within Human Resources Management by providing fast, accurate, and comprehensive data. To understand the landscape of HCMIS implementation and challenges within the public sector of Tanzania, this study conducted a systematic review of policies, legislation, and scientific literature.

Methodology – The study assessed the extent of HCMIS utilisation in the Tanzanian public sector and examined associated challenges using the task-technology fit model. To analyse the gathered data, a systematic qualitative synthesis employing nomothetic-based content analysis was used.

Findings – The analysis revealed that HCMIS usage in the public sector primarily focused on payroll management, with additional applications in employee information management, recruitment and selection, performance management, training and development, benefits administration, analytics and reporting, and succession planning. The five key challenges hindering HCMIS applications were also identified.

Implications – The study recommends expanding the scope of HCMIS applications, improving interdepartmental coordination, ensuring adequate and consistent budget allocation for the acquisition of HCMIS accessories by Ministries, Departments, and Local Government Authorities (MDAs and LGAs), fostering greater support from top management to enhance HCMIS operations, and revising ICT and HR programme curricula in higher educational institutions to incorporate specialised courses in HCMIS operations.

Originality – This study contributes to the existing literature by providing a comprehensive examination of HCMIS implementation and challenges within the Tanzanian public sector. The findings offer valuable insights for policymakers, practitioners, and academia.

Keywords

Human resources management, human resource information systems, Tanzanian public sector

1 Introduction and background of the study

Human Resources (HR) refers to human capital within a particular organisation that is responsible for performing the tasks given to them to achieve the goals and objectives of the organisation (Bhattacharyya, 2010). HR is the most valuable resource in any organisation because it controls all other resources. HCMIS is defined as a comprehensive system that is used in the acquisition, entry, storage and management of human resources data (Lufunyo, 2017). HCMIS has further been defined as a high-tech system that reliably informs organisational decision-making processes (Deloitte & Goddey, 2017). Although HCMIS various definitions exist, the majority of authors agree that the prime functions of HCMIS include data acquisition, storage, processing, and data flow to relevant organisational recipients (Masele & Kagoma, 2023; Mkongo & Macha, 2022; Ababneh & Shrafat, 2014).

The integration of Information Technology (IT) into Human Resource Management (HRM), commonly referred to as e-HRM, has significantly transformed HR practices globally. Central to this integration is the utilisation of Human Resource Information Systems (HRIS), aimed at modernising HR functions through advanced technological systems (Alwis et al., 2022; Myllymäki, 2023). Owing to the recent global advancement in Human Resource Management (HRM) technology, several organisations worldwide are now transitioning from the traditional paper-based record system, as characterised by deficiencies such as sluggishness resulting in delays in data accumulation, generation, and retrieval (Hoyle & Sebina, 2008; Griffin et al., 2009; Makhumalo, 2014). The traditional system was also blamed for erroneous data output in Tanzania's public sector and elsewhere (Ishijima et al., 2015; Jorojick, 2015; Lameck, 2015). A good example of the weakness of the traditional system in Tanzania was the discovery of 16,000 "ghost workers" out of around 350,000 employees in the government payroll (Sawe & Maimu, 2001; Matimbwa & Masue, 2019).

To date, many organisations in developed and developing countries are increasingly using Human Capital Management Information Systems (HCMIS), which has proved to be a lasting solution to the shortcomings of the paper-based system, considering that HCMIS results in greater HRM efficacy, managerial performance, strategic positioning, consequently boosting the overall organisational performance (Shrestha & Chalidabhongse, 2007; Haji & Ahmed, 2017; Matimbwa & Masue, 2019; Mkongo &

Macha, 2022; Masele & Kagoma, 2023). In Tanzania, the adoption of HRIS, particularly the Human Capital Management Information System (HCMIS), in the public sector has been a notable endeavour since its implementation in 2011 (Chinyuka, 2018). HCMIS has been instrumental in streamlining various HR functions within Tanzanian public sector entities. These systems facilitate recruitment and selection processes, employee data management, payroll administration, and career planning and development (Matimbwa & Masue, 2019). It also aids in generating HR reports and managing employee deductions, contributing to improved organisational performance and service delivery (Chinyuka, 2018). To date, the HCMIS System is used in 541 public institutions, while 558 new users from 241 public institutions have been registered in the system (United Republic of Tanzania, 2022). Since the system possesses information that is sensitive and valuable, in 2014, the government introduced HCMIS Security Guiding Principles (United Republic of Tanzania, 2014). However, after a decade of using the system, some of the problems of the paper-based system persist. An audit report of the public sector conducted in 2016 revealed problems almost similar problems that were observed during the use of paper-based systems. These include fraudulent activities in the public sector employee payroll, the presence of unqualified personnel in government agencies, delayed public sector promotions, and mismanagement of employee career development plans (Jorojick, 2015; Lema, 2013; Njau, 2017; Tefurukwa, 2021; Tefurukwa, & Bwaki, 2022).

The fact that almost all the challenges persisted even after adopting the high-tech HR system suggests the need for a better understanding of the effectiveness of HCMIS usage in the public sector. The public sector in Tanzania is defined to include government departments, agencies, authorities and non-profit organisations whose accounts are integrated into the budget as well as public enterprises. Since the use of the HR system is mandatory for all public sectors, and all are using it, there are two critical questions to be asked to find out the persistence of the same challenges. The questions are as follows: (1) What is the scope of using HCMIS in the public sector? (2) What are the challenges associated with the use of the system? Therefore, this review paper aims to answer these two questions. Based on the two research questions, two specific objectives of this paper are (1) to assess the scope of HCMIS usage in public sectors in Tanzania and (2) to analyse the challenges associated with the use of HCMIS. This study is different from others that focused on specific sectors such as LGAs (Njau, 2017; Matimbwa & Masue, 2019; Mwita,

2022), Tanzania Revenue Authority (TRA) (Mkongo & Macha, 2022), and public universities (Chinyuka, 2018). This study uses the results of public sector-specific studies to provide an overall picture of HCMIS application in the Tanzanian public sector.

This paper seeks to advance knowledge on the scope and challenges of HCMIS application with a view to informing policymakers and practitioners on alternative options for making crucial decisions to improve HCMIS implementation. This study made use of the Task Technology Fit (TTF) Theory, which was put forth by Goodhue and Thompson (1995), to understand the scope of HCMIS application in the public sector. This selection was made because HCMIS is a technological matter, and the choice of HCMIS application should align with the tasks of organisations. The relationship that exists between individual performances, technology utilisation, technological characteristics, and task characteristics is the primary idea of TTF, which is also applicable in HCMIS. According to the hypothesis, if the right technology is wholly employed in accordance with the task characteristics, individual performance will increase. Lack of appropriate technology selection that matches the requirements of the tasks in the public sector can result in subpar or decreased performance.

The introduction and use of HCMIS technology has enhanced performance in Tanzania's public service since its features match those of HR tasks. Nevertheless, public service performance has not yet been achieved 100% (Mkongo & Macha, 2022; Mwita, 2022). Figure 1 presents the Task Technology Fit (TTF) as developed by Goodhue and Thompson (1995). According to Figure 1, TTF is attained when task characteristics and technological features align. The study's technology is HCMIS, and the work characteristics discussed here are HRM functions. Since the HCMIS contains HRM functions, the features of the task and the technology are compatible. Therefore, to carry out human resource operations, including promotions, performance reviews, training, employee benefits, pay, and termination of employment, among many others, HCMIS applications are used.
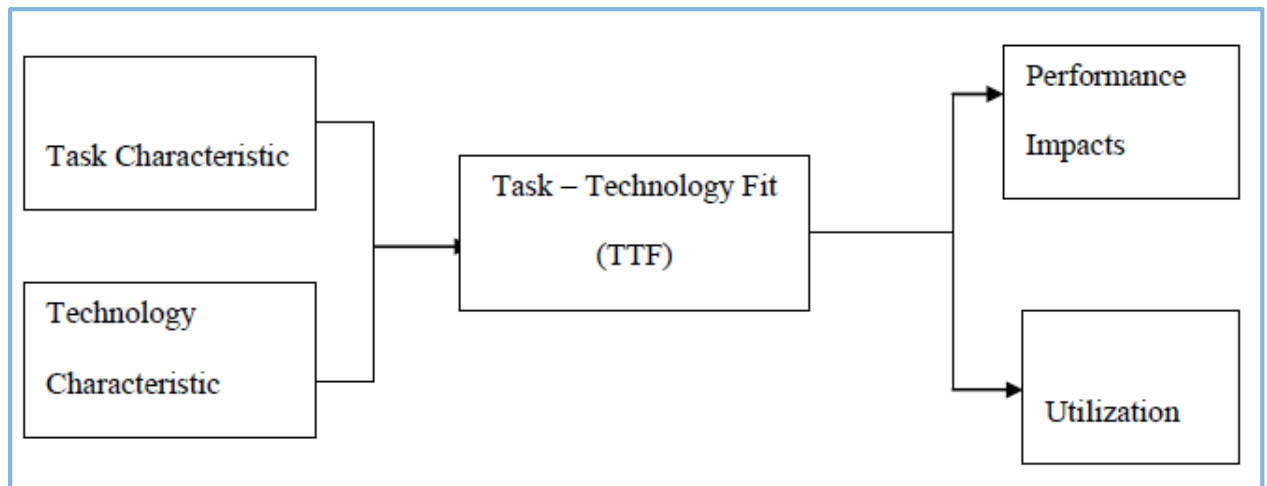
Figure 1: Illustration of Task Technology Fit
Source: Goodhue and Thompson (1995)

The rest of this paper is organised as follows: the next section presents the methodological details adopted in gathering materials for the study, followed by an overview of the evolution of HCMIS in Tanzania. The scope of implementation and use of HCMIS in the country was then x-rayed, followed by the challenges faced. The concluding thoughts and policy implications finalised the paper.

2 Research methodology

Systematic review principles were applied, and multiple methods were used to uncover relevant literature. Electronic databases, including Web of Science (Clarivate Analytics), Scopus (Elsevier's abstract and citation database) and Google Scalar, were used to search the terms "Human Capital Management Information System", "human resources", "human resource management", "public sector", and "Tanzania" to identify both peer-reviewed publications in international journals and reports. In addition, reference and citation tracking and backward snowballing were used to find articles based on literature identified and already familiar to the authors. Backwards snowballing involved reviewing the reference list of identified literature by tracing cited references in literature that have been reviewed in this study. Additional relevant material was identified from research groups and institutions working on relevant subjects, such as HCMIS.

Moreover, an analysis of relevant policies and legislation concerned with the HCMIS was carried out. This included the National Employment Policy of 1998, with its amendments of 2008 (United Republic of Tanzania, 2014), the National Information and Communication Technology of 2016 (United Republic of Tanzania, 2016), and the HCMIS Security Guiding Principles of 2014 (United Republic of Tanzania, 2014).

Objectively, we decided to focus on these particular documents because they form the basis for HCMIS. Furthermore, we evaluate the institutional, technical, and financial challenges and identify five fundamental features that must be present in policies and legislation for the successful implementation and functioning of HCMIS. These fundamental elements include 1) financial capacity to acquire, update and maintain HCMIS, 2) expertise, 3) existing government structures, 4) network services, and 5) top management support.

Data collected through the literature review were treated as qualitative secondary data. Therefore, a systematic qualitative synthesis using nomothetic-based content analysis was applied for analysis. In this case, common themes related to the fundamental elements of the subject matter were analysed. Challenges facing the use of HCMIS that have been identified in the literature were critically examined in the policies, legislations, regulations, and guidelines. Evidence of the outcome resulting from the current identified challenges was also linked with the recommendations provided.

3 Findings of the study

The HCMIS is a strategic tool that helps streamline Human Resources (HR) processes and enhance overall organisational efficiency. The system typically encompasses a wide range of functions/applications related to human capital. Studies carried out in public sectors in Tanzania identified eight (8) HCMIS applications: 1) employee information management, 2) recruitment and selection, 3) performance management, 4) training and development, 5) payroll management, 6) benefits administration, 7) analytics and reporting, and succession planning (Njau, 2017; Chinyuka, 2018; Matimbwa & Masue, 2019; Mwita, 2022; Masele & Kagoma, 2023). The scope of the HCMIS application differs in public sectors based on the specific demands of the sector and technological capabilities. Table 1 presents the scope of HCMIS application in public sectors in Tanzania.

Table 1: Scope of HCMIS application in public sectors in Tanzania

SN	Scope of HCMIS application	Frequency of observations in reviewed literature	Examples of public sectors	Authors of the literature reviewed
1	Payroll management	5	Public universities in Tanzania, LGAs, Judiciary of Tanzania	Njau (2017), Chinyuka (2018), Matimbwa and Masue (2019), Mwita (2022),

				Masele and Kagoma (2023)
2	Employee Information Management	3	LGAs, Judiciary of Tanzania	Njau (2017), Matimbwa and Masue (2019), Mwita (2022).
3	Analytics and Reporting	2	LGAs	(Chinyuka, 2018), Matimbwa and Masue (2019)
4	Recruitment and selection	2	Tanzania Revenue Authority (TRA) and LGAs	Mkongo and Macha (2022), Matimbwa and Masue (2019)
5	Training and Development	2	Tanzania Revenue Authority (TRA) and LGAs	Mkongo and Macha (2022), Matimbwa and Masue (2019).
6	Succession (Career) Planning	1	LGAs	Matimbwa and Masue (2019)
7	Benefits Administration	1	LGAs	Matimbwa and Masue (2019)
8	Performance Management	1	LGAs	Matimbwa and Masue (2019)

There are five main five (5) challenges to the application of HCMIS in the public sector in Tanzania. These include 1) limited financial capacity; 2) inadequate expertise in Information and Communication Technologies (ICTs) and HCMIS; 3) unintegrated government structures for the handling of personnel data; 4) unreliable internet connectivity; and 5) inadequate top management support.

4 Discussion of findings

The findings have been discussed mainly based on the scope and challenges of HCMIS application in the Public Sector.

4.1 Scope of HCMIS application in public sectors

The scope of the HCMIS application in public sectors is mainly for payroll management. This is confirmed by the studies conducted in public universities, Local Government Authorities (LGAs), the Tanzania Revenue Authority (TRA) and the judiciary. A reason for this is the fact that payroll has a more considerable number of employees, over 500,000, which is difficult to handle using a paper-based system. According to studies conducted, payroll management includes functions like automated payroll calculations, tax deductions, and other financial aspects related to employee compensation (Njau, 2017; Chinyuka, 2018; Matimbwa & Masue, 2019; Mwita, 2022; Masele & Kagoma, 2023).

The HCMIS has also been reported to be used for employee information management in the Tanzanian public sector. In this, the system is used to maintain a centralised database of employee information, including personal details, contact information, skills, qualifications, and work history. This is confirmed by the studies conducted by LGAs and the judiciary. Those studies have shown that many HROs in public sectors have been trained to use personnel administration forms in the system, which are used to change employees' salaries after promotions, transfer of employees from one employer to another, changing of personnel information in the system, termination of employees from the payroll, data cleaning, re-categorisation and status change (Njau, 2017; Matimbwa & Masue, 2019; Mwita, 2022). The application replaced the old record-keeping system that involved the use of papers pinned in personal files, which were prone to damage and security issues as are easily lost and limit communication and collaboration (Jorojick, 2015; Lema, 2013; Tefurukwa, 2021). According to the literature, the system is connected to the internet, which simplifies the sharing of data vertically (across departments of different sectors) or horizontally (between sections within the same sector).

Studies conducted in LGAs reported the use of the system for analytics and reporting. This involves the generation of reports and analytics on various HR metrics, such as employee turnover, workforce demographics, and performance trends (Chinyuka, 2018; Matimbwa & Masue, 2019). In addition, the public sector uses HCMIS for recruitment and selection. In this, the system is used to facilitate the recruitment process, from posting job openings and managing applications to conducting interviews and selecting new hires (Mkongo & Macha, 2022; Matimbwa & Masue, 2019). The study conducted by Mkongo and Macha (2022) in the Tanzania Revenue Authority (TRA) on the impact of the HCMIS on organisation performance observed that the system increases the rate of handling customer complaints, hence ensuring quality of service delivery and increasing the number of staff employed hence deliver quality works. Moreover, the system is used for training and development by identifying training needs, scheduling and tracking employee training programmes, and managing professional development opportunities (Mkongo & Macha, 2022; Matimbwa & Masue, 2019). According to Mkongo and Macha (2022), office-based e-training practices increase staff training, resulting in increased professionalism in service delivery, which in turn affects customer satisfaction and adds value by enabling quick responses to customers using online services.

Furthermore, public sectors in Tanzania are using HCMIS for succession (career) planning, benefits administration, and performance management (Matimbwa & Masue, 2019). In succession (career) planning, the system is used to identify and nurture talent within the organisation for future leadership roles through succession planning tools. This is done by monitoring the progress of newly recruited employees to take the lead in the future. This is easier in web-based systems than in paper-based systems. Kossek et al. (1994) had the opinion that the use of HCMIS allows HROs to assist employees in designing their training development and career plans. The public sector in Tanzania is also using HCMIS for the benefit of the administration. In this HCMIS application, the most common uses reported include managing employee benefits programmes, including health insurance, retirement plans, and other perks (Matimbwa & Olatokun, 2023). Along with this, the public sector is using the system for performance management. In this, the system is used to set goals, track employee performance, conduct evaluations, and manage performance reviews. The system has tools for feedback, goal setting, and performance analytics (Matimbwa & Masue, 2019).

4.2 Challenges of HCMIS application in the public sector

The challenges of HCMIS application in the Tanzanian public sector are discussed as follows:

4.2.1 Limited financial capacity

Limited financial capacity in many public sectors in Tanzania is considered a vital challenge for the effective application of HCMIS (Njau, 2018; Njau, 2017). Insufficient financial resources constrain public sectors to procure and install modern hardware and software. The most crucial hardware needed for the effective running of the HCMIS includes computers for local data access and input, Uninterruptible Power Supply (UPS) systems, and printers. Software needed to support the operation of the system includes server-side software like HTML, Java, and Perl, an Intranet communications protocol, and relational database/information processing software for records and payroll management (World Bank, 2002). This is due to the government allocating a small budget to acquire the necessary number of computers and accessories, which hinders the full utilisation of the HCMIS. Njau (2018) and Njau (2017), in different studies, pointed out that many public sectors, including MDAs and LGAs, are impacted by the limited investment in HCMIS; lack of funds forces HROs in public sectors to use old computers. The study conducted by Chinyuka (2018) in Moshi District Council pointed out that the use of old-fashioned

computers reduces the performance of the HCMIS, hence recommending new advanced computers which match the speed of the system.

Besides old-fashioned computers, studies on HCMIS in Tanzania have shown the existence of a significant ratio variance between the number of computers and accessories in Tanzania's public sectors, which are currently in deficit, and the number of skilled system users (Njau, 2018). Njau (2017) cited an example of Mwanza Municipality, where there is one room with three computers and six system users, implying a ratio of 1:2, which means one computer for two users. The shortage of computers and accessories not only affects the performance of HROs but also delays service delivery to community members. The challenge of limited financial resources in the public sector also has implications for the maintenance and updating of the system (Midiwo, 2015; Matimbwa & Masue, 2019). It must be noted that HCMIS has two main components: hardware and software. The software needs to be updated to keep up with technological changes and to protect the system from hackers and computer viruses. Ishijima et al. (2015) have stated that the lack of funds in the public sector affects the maintenance and updating of the system. A similar challenge is not only facing Tanzania but also affecting many developing countries like the River Nile State of Sudan (Ochenge, 2015).

4.2.2 Inadequate expertise in ICT and HCMIS

Inadequate expertise in ICT and HCMIS is the second most crucial challenge of HCMIS application in public sectors in Tanzania. The indisputable fact in the application of HCMIS is that the accumulation of superior abilities and information by practice, education, and experience leads to positive impacts. Because of the system's wide range of applications, HROs with Information and Communications Technology (ICT) expertise are required to install, manage, and run the HCMIS efficiently (Njau, 2017; Chinyuka, 2018; Mwita, 2022). Due to a lack of ICT skills and a large workforce, Tanzania has considerable hurdles with the use of HCMIS, especially in the public sector. The National ICT Policy highlights two main concerns with ICT human capital: 1) a lack of understanding of the value of ICT specialists, and 2) a scarcity of professionals with the ICT skills needed to propel the country's information-age and socioeconomic development initiatives (United Republic of Tanzania, 2016). In addition, the unwillingness of corporations to make investments in the improvement of ICT personnel has further widened the knowledge gap, as observed by Matimbwa et al. (2021).

The two staff groups most affected by limited competence are those with direct access to the HCMIS, and the majority of this category is made up of HROs. As per the HCMIS user handbook of the HCMIC, access to employee data management and system modifications is restricted to approved HROs only (Lufunyo, 2017). Owing to this, HROs with a broad range of skills—particularly in ICT and HR—are excellent candidates for their positions. The current state of affairs, however, suggests that a sizable portion of HROs are inadequately knowledgeable about the HCMIS application. For instance, in the case of Mwanza Municipality, personnel ineptitude has resulted in the utilisation of just 43.3% of the system's capacity (Njau, 2017). It was reported by Njau (2017) that a notable knowledge gap exists as employees struggle to use essential forms like Personnel Administration Form 21 (PA21), Personnel Administration Forms 34 (PA34), Allowance Form TZ042, and Payroll Form 15 (PR15). The latter form is utilised for uploading multiple deductions, while the Personnel Administration form (PA52.4) is crucial during employee selection and recruitment processes (Njau, 2017). Other institutions responsible for hiring, such as MDAs (Ministries, Departments, and Agencies), have also expressed concerns about the lack of knowledge in this area. Although a few trained HROs with direct system access exist, they are mainly concentrated in certain MDAs, particularly in the health sector and LGAs (Daniel, 2015). Unfortunately, due to the reluctance to invest in capacitating HROs with HCMIS application knowledge, many of them are learning on the job, which is evident in their hesitance to use the system (Matimbwa et al., 2021). Daniel (2015) highlighted that a deficiency in computer skills among employees in the public sector is particularly felt during meetings when skilled personnel are absent.

To stop any potential information breaches or losses, the IT staff is essential in maintaining, improving, and securing the organisation's databases (Mwita, 2022). To be more precise, the HCMIS Payroll Software adheres to a planned maintenance programme to guarantee both security and seamless operation. This timetable comprises quarterly assessments to evaluate and modify the system's security access, in addition to monthly debugging of the system during coding, setup, and updates. In addition, a biannual maintenance exercise is carried out to eliminate outdated functionalities and documents, reassembling data, and rearranging dashboards for maximum efficiency. In addition, a yearly system evaluation is conducted to ensure that all system specifications are met and that records of former workers are removed from the system (Rietsema, 2019). To achieve this, Ishijima et al. (2015) pointed out that one way to maintain the system maintenance procedure's affordability is to use the expertise of existing organisational professionals.

However, a significant setback is the scarcity of HCMIS specialists in public sectors, including MDAs and LGAs, leading to increased maintenance costs and unnecessary delays in operation (Ochenge, 2015). This shortage of specialised personnel poses a significant challenge, requiring organisations to find innovative solutions to maintain the HCMIS payroll software efficiently and effectively.

4.2.3 Unintegrated government structures for the handling of personnel data

Several parties are involved in Tanzania's payroll operations via HCMIS, including the Public Service Department (PSD) and the Ministry of Finance, which employ ministries, departments, and agencies (MDAs), as well as various service commissions. Unfortunately, these government structures are not well integrated for the handling of personnel data (Rietsema, 2019). According to Tefurukwa and Bwaki (2022), unintegrated Government structures for the handling of personnel data happen when the system manager fails to fulfil his/her duty of entering personal information such as employees who have just died, employees in MDAs or LGAs who have just been dismissed, or employees who have voluntarily retired from time to time. Also, they pointed out that with an exception for the Government Salary Payment Platform (GSPP), HCMIS has no proper connection with other e-government systems such as other authorities' databases like National Identification Authority (NIDA) on the birth certificate and other particulars. These systemic deficiencies lead to the continued existence of ghost workers.

Njau (2018) had a similar observation regarding the complexity of the HCMIS and unintegrated government structures in Tanzania for the handling of personnel data. The author pointed out that the HCMIS is complex due to the involvement of multiple parties. A challenge occurs when certain actors have not fulfilled their responsibilities promptly, resulting in delays in the decision-making process, which was pointed out as a lack of cooperation among departments in information sharing. There have been cases where information about deceased employees took longer to be disclosed, resulting in delays in removing them from the payroll. For instance, the secondary education department once failed to promptly notify system users about the resignation of department personnel (Njau, 2017). Reports indicate that the system requires information on various aspects, including transferred employees, employees being promoted, employees being removed from the payroll, employees facing disciplinary proceedings, and those whose data would undergo data cleansing.

4.2.4 Unreliable Internet connectivity

Unreliable internet connectivity further hinders HCMIS application in the Public Sector (Chinyuka, 2018; Mwita, 2022). The study conducted in Moshi District Council found that the speed of system operation decreases with decreasing internet power. The system always displays errors such as unfinished pages, broken links, and delays while it is operating because of unreliable internet connectivity. This significantly lowers productivity and causes the system to take longer to complete loaded tasks. A similar observation was reported by Kassam (2013) in the study on the challenges of LAWSON, version 9, in the Shinyanga Municipal Council. LAWSON V 9 is one of the information systems introduced by the Local Government Authorities in Tanzania with the objective of ensuring accuracy and timeliness in the provision of human resource information for managerial decision-making (Jorojick, 2015). In the results of Kassam, 2013, the author reported poor network infrastructures, intermittently no network, and weak network signals in the use of LAWSON V 9.

A reliable and fastest internet connection is of foremost importance for the effective operation of HCMIS. To address the challenge of unreliable internet connection, the Tanzanian Government has championed the implementation of National Information Technology Backbone (NICTBB) Optic Fibre Cable across regional headquarters and LGAs. The decision to replace the satellite bandwidth, as previously used in Tanzania's public sector, was informed by the fact that the NICTBB optic cable has greater capacity and is friendlier for both local and international communication (United Republic of Tanzania, 2016). Upon its successful implementation, the Tanzania Telecommunication Company Limited (TTCL) was mandated to operationalise the NICTBB Optic Fibre Cable network (United Republic of Tanzania, 2016; Daniel, 2015). Despite all efforts, however, unreliable internet connectivity persists and negatively affects HCMIS applications in the public sector. In some circumstances, to rescue the situation, employees in such public sectors have been forced to improvise by incurring the cost of purchasing personal internet bundles to access HCMIS and update HR information. Amidst such efforts, however, public sectors have yet to forge a lasting solution to the internet predicament, as efforts to use personal internet bundles have proved futile since the internet is slow and costly (Madulu, 2016; Daniel, 2015).

4.2.5 Inadequate top management support

Lack of top managerial support is another challenge facing HCMIS applications in Tanzania. The poor relationship between staff members and technology, as well as the fact that middle managers use the system more often than senior managers to create, monitor, and analyse employee data, are two more significant obstacles to achieving the best possible performance from the HCMIS. Because of their positions of authority and the capacity to assign duties to subordinates, top managers do not use HCMIS as much as they should (Bwaki, 2018). In addition, some MDAs lack top managerial support, as evidenced by their unwillingness to purchase enough computer facilities to bridge the wide variation in computer-user ratios and their availability in a single office room that is barely big enough to fit all HCMIS operators (Njau, 2017). Limited support from senior managers has been identified as the cause of the ongoing delays in MDA decision-making procedures. For instance, due to top managers' tardiness in finishing their share of the work on the system, particularly approvals, several jobs have been started but left unfinished (Lema, 2013; Njau, 2017).

Previous studies have consistently demonstrated that an institution's top management must provide financial support for HCMIS to operate at its best (Akoyo & Muathe, 2017; Daniel, 2015; Deloitte & Goddey, 2017). To promote organisational change, that is, influence employee attitudes and behaviour toward HCMIS application, top management is a key player. Ahmer (2013) pointed out that insufficient top-level managerial support may have the opposite effect on how well HCMIS is used. Madulu (2016) and Wairimu and Karanja (2016) highlight the importance of top management support for the successful implementation of HCMIS and suggest that to close the skills gap and guarantee consistent, efficient system use, organisations should actively support personnel capacity building, particularly among direct HCMIS users, who are HROs in public sectors in Tanzania.

5 Conclusion

In this study, we utilised the Task-Technology Fit (TTF) model to assess the compatibility between technology and specific tasks within the Public Sector of Tanzania, focusing on the Human Capital Management Information System (HCMIS). The findings underscore the alignment between HCMIS adoption and the TTF model across various HR functions, such as payroll management, personnel administration, data management, analytics, reporting, recruitment, and selection. This alignment enhances efficiency, data accuracy,

and overall organisational effectiveness. Despite the widespread adoption of HCMIS, the Tanzanian public sector has yet to fully leverage its potential. This study identified five key challenges hindering optimal HCMIS utilisation, namely: limited financial resources, insufficient ICT and HCMIS expertise, fragmented government structures for personnel data management, unreliable internet connectivity, and inadequate top management support. These challenges underscore the need for strategic interventions to maximise the benefits of HCMIS in the Tanzanian public sector. The outcome of the study thus provides a foundation for recommendations aimed at addressing these obstacles and unlocking the full potential of HCMIS to drive organisational efficiency and effectiveness.

6 Recommendations

At present, the major applications of HCMIS in the Tanzanian public sector are centred on payroll management, employee information management, analytics and reporting, recruitment and selection, and training and development. This scope might not fully remedy the shortcomings of the traditional paper-based system, previously used by HRM in various sectors, by ensuring efficacy in personnel record-keeping, that is, revising and upkeeping personnel information, managing the hiring process, generating employee reports, handling deductions and direct deposit allocations, facilitating career planning, and overseeing training and professional growth. An increase in the HCMIS applications is advocated to increase efficiency, better decision-making based on data insights, improved employee satisfaction, and compliance with HR regulations. The choice of HCMIS application should align with specific needs and goals, and the system should be regularly updated and optimised to meet evolving HR requirements.

This study identified the challenge of unintegrated government structures for the handling of personnel data because of the lengthy bureaucratic procedures that delay decision-making processes. Therefore, the public sector should enhance channels of communication by improving coordination between departments to speed up the flow of information among system users. This will no doubt tackle the current problem of incomplete data and inaccurate output and, in a ripple effect, minimise the fraudulent addition of ghost workers to the public sector payroll.

Regarding inadequate top management support, it is recommended that public sector top management should render greater support to enhance HCMIS operations. The continued

reluctance to address pertinent HCMIS-related issues will only encourage the persistence of long-lasting challenges, such as an increase in ghost worker cases and underemployment. The government can further express its support by allocating an adequate and steady budget to enable MDAs and LGAs to purchase necessary HCMIS accessories, have all required facilities in place, and holistically upgrade the system. The government should employ an adequate number of HCMIS specialists in all MDAs and LGAs to allow in-house ICT specialists to focus exclusively on operating the system.

To address the challenge of inadequate expertise in ICT and HCMIS, the study recommends that the government should mandate all higher institutions of learning to review their ICT and HR programme curricula at all academic levels to assimilate a particular course in HCMIS operations. Higher education institutions should also offer short professional courses in HCMIS to accommodate those currently employed in HR departments but significantly lacking skills in ICT and HCMIS operations. The government should support such programmes by offering scholarships to motivate employee enrollment. The public service department, Public Service Management (PO – PSM), and treasury should make joint efforts in addressing HCMIS-related challenges in all MDAs and LGAs by implementing a particular policy guiding data handling, entry, storage, and entry forms by making them user friendly. Finally, a sustainability plan for the HCMIS should be put in place by the government to detail the community, financial and organisational sustainability of the project.

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