

The influence of e-training and development on the HR performance of Tanzania local government authorities (LGAs)

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<https://doi.org/10.51867/ajernet.7.1.27>

ABSTRACT

The rapid advancement of digital Human Resource Information Systems (HRIS) has transformed training and development activities in public institutions by integrating e-Training components such as Electronic Human Resource Skills Inventory (HRSI), Track and Administer Intervention (TAI), and Recording of Training Expenses (RTE). These systems aim to enhance employee competencies, streamline human resource operations, and improve overall organizational performance. While global studies have shown that e-training effectively supports workforce development, its adoption in Africa, particularly in Tanzania, faces challenges including inadequate infrastructure, low levels of digital literacy, and partial utilization of HRIS applications. Resource-Based View (RBV) theory and Human Capital Theory guided this research. This study employed a mixed-methods research approach to empirically examine the effects of HRSI, TAI, and RTE on human resource performance across 43 Local Government Authorities (LGAs) in Tanzania. Quantitative data were collected from 200 human resource and administrative officers using structured questionnaires and analyzed through descriptive statistics and multiple regression techniques. In addition, qualitative data were obtained through in-depth interviews and analyzed thematically. The findings indicate that all three e-training components positively influence HR performance, with RTE having the strongest effect, followed by HRSI and TAI. Qualitative results further reveal improvements in skills identification, monitoring processes, and financial accountability, leading to greater transparency. The study concludes that e-training components serve as strategic tools for workforce development and service delivery within Tanzanian LGAs. Consequently, the study emphasizes the need to prioritize strategic interventions to enhance the effectiveness of these e-training elements.

Keywords: Digital Skills, Electronic Training, HR Performance, HR Information Systems, Local Government Authorities

I. INTRODUCTION

The widespread integration of digital technology into public management practices has brought a major shift in the way governments engage with the development of human resource management (Balogun & Enemuo, 2022). In both developed and developing countries, public institutions are increasingly embracing electronic Human Resource Information Systems with the aim of ensuring efficiency, effectiveness, and delivery. One of the major areas through which public institutions are undergoing a major shift with regard to digital technology is through the online training systems, referred to as e-Training systems, that monitor training outlays in real-time (Gange & Barongo, 2024; Islam, 2023). An important aspect of the new human resource management is that it is no longer dependent on the presence of human resources but is linked to digital management capacities for apt human resource performance.

Within Africa, the adoption of e-Training remains low owing to infrastructure challenges, but there is promise for enhancement of public sector capacity if effectively adopted (Akpoviroro, 2022; Mahamoud, 2021; Okanda & Makhamura, 2023). Research in banking and public institutions focuses on the reduction of costs and extension of training opportunities via user-friendly platforms, despite the constraints of network accessibility, among other training issues, hindering application of such training to performance improvement. East African states, such as Kenya and Uganda, register fair levels of e-Training pilot project implementation success, with emphasis on the need for management support to alleviate implementation challenges characteristic of low-resource environments (Mutio & Samuel, 2022; Ronkoine *et al.*, 2024).

A significant role in the execution of development policies by the government of Tanzania is played by Local Government Authorities (LGAs). These LGAs provide crucial services such as the areas of education, health, water,

infrastructure, and community development, which are completely reliant on the presence of capable, motivated, and professionally trained human resource (Mwamakula, 2024). But for decades, the LGAs have experienced serious issues with respect to training opportunities, skill inventory analysis, disorganized training data, as well as inefficient training budgets (Kawina, 2024; Kyebiyala & Rutenge, 2024). Such issues often caused disparities between human resource skills and service delivery areas.

A number of challenges prompted the Government of Tanzania to implement various public sector reforms that would enhance human resource management using information technology (Kyebiyala & Rutenge, 2024; Mseven, 2023). It should be noted that the implementation of HRIS systems in LGAs would enable the public authority to streamline its human resource management processes using information technology. In this regard, various components of e-Training, such as the Electronic Human Resource Skills Inventory (HRSI), Electronic Tracking and Administration of Interventions (TAI), and Electronic Recording of Training Expenses (RTE), were developed to ensure that training decisions are evidence-based. These solutions developed by the GoT would enable LGAs to track their training needs, including their existing and desired training skills.

Despite the efforts that have been made through policy and technology, the effectiveness of e-Training systems for HR performance in the LGAs of Tanzania is still a quantitative gap that remains less understood. While research has shown that e-Training systems improve productivity, learning outcomes, and effectiveness, it could not be generalized in a context that is characterized by challenges of infrastructure, human skills of information technology, and varying levels of e-Train utilization among the LGAs of Tanzania (Kawina, 2024; Kyebiyala & Rutenge, 2024; Mahamoud, 2021; Mseven, 2023; Mwamakula, 2024). Additionally, the body of literature that is found in Africa, through research on HRIS systems, is majoring in understanding the challenges of implementation. Additionally, little literature focuses on identifying e-Train systems that alleviate poor HR performance.

This study makes a contribution by empirically investigating the role of e-Training & development on the performance of the HR in the LGAs of Tanzania using a mixed research approach. While using both quantitative and qualitative data, the study goes beyond mere description of the adoption of HRIS in public organizations to provide an insightful understanding of the role of e-Training systems as a strategic resource in public organizations. A combination of the Resource-Based View Theory and the Human Capital Theory provides a robust theoretical framework that explains the role of e-Training systems in improving sustainable HR performance of public organizations using this research approach. Using this research approach, the study is an important contribution to the literature of HRM in the public sector context.

1.1 Research Objectives

- i. Determine the influence of e-Human Resource Skills Inventory on LGA performance.
- ii. Determine the influence of Electronic Track and Administer Intervention on LGA performance.
- iii. Determine the influence of Electronic Recording of Training Expenses on LGA performance, providing causal evidence to guide LGA digital transformation.

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Resource-Based View Theory

Resource-Based View (RBV) theory is a framework used to describe organizational performance with a focus on the strategic role of organizational resources and capabilities without consideration of the external environment (Barney, 2001). Based on RBV, better and sustained organizational performance can be achieved if an organization possesses resources which are valuable, isolative, imitable, and non-substitutable in nature. In non-market competition environments in public sector institutions such as LGAs where performance is measured in terms of efficiency, accountability, and service delivery effectiveness, RBV acts as a relevant theoretical tool in establishing organizational performance differences among institutions operating under a common environmental setting (Assensoh-Kodua, 2019). E-Training & Development tools under HRIS can be considered a strategic organizational resource because they blend technology, organizational knowledge, human capital, and organizational bureaucratic assets into a unified dimension. Their successful application in an organization leads to a learning and facilitating function leading to enhanced Human Resource performance (Lubis, 2022; Rengkung, 2015).

Under the RBV, elements of e-Training such as Electronic Human Resource Skills Inventory (HRSI), Electronic Tracking & Administration of Training Interventions (TAI), and Electronic Recording of Training Expenses (RTE) can be formed into a vision of complementary capabilities of an organization. The capability brought by HRSI can be viewed as a source of information for LGAs because it enables them to identify systematically their human capital strengths and weaknesses in terms of worker skill sets. TAI builds on organizational capability by embedding training administration and evaluation functions in an organizational setting, hence making these functions less

personal and less disorganized. On the other hand, capability built by RTE can be seen as a way of ensuring enhanced financial strategic investment in human resource development in an organization. The above elements come into a single resource dependency in an organization setting and hence improve organizational performance in LGAs in Tanzania.

2.1.2 Human Capital Theory

Human Capital Theory asserts that spending on education, human skill development, and learning can raise individual productivity because of performance gains over time (Nadezhina & Avduevskaia, 2021). Founded on Becker and Schultz's economic principles, this theory views an individual's knowledge, skills, and abilities not simply as personal traits but rather capital investments with returns in terms of increased efficiency and service delivery. In a public institution setting, which relies on an individual's service delivery capability rather than product delivery, capital investments in human capital become an important factor (Nafukho *et al.*, 2004). To address this need in LGAs, worker skill shortages, government policy shifts, and citizen demand increasingly require continuous training and development opportunities.

Analysing this theoretical underpinning, an e-Training and Development application can therefore be considered a mechanism in a public institution setting for capitalizing on human capital formation and use. E-Training elements such as HRSI, TAI, and/or RTE immediately operationalize the assumptions of Human Capital Theory in improving the effectiveness and efficiency of investments in training. The role of HRSI in this case is to facilitate human capital build-up by allowing LGAs to sync training with analysis of human capital deficiencies, thus improving chances of a positive effect of training on work performance. TAI increases the chances of a positive effect of training on work performance by allowing LGAs to follow up training processes, which is very important in ensuring a positive impact of learning on work performance. Additionally, the role of TAI is to enable LGAs to follow up with evaluation after training in order to improve work performance. The significance of this element of e-Training is that it contributes to increased effectiveness of investments in human capital in improving HR performance in LGAs in Tanzania.

2.2 Empirical Review

Empirical evidence has continuously shown that the use of e-training and digital learning systems increases the effectiveness of employee training and performance in both public and private organizations. Studies in developing-country contexts reveal that e-training promotes accessibility, flexibility, and continuity of learning and also makes the linkage between training and job performance strong. Akpoviroro (2022), for instance, shows that e-learning moderates the relationship between employee training and development and performance at Kwara State University in Nigeria and argues that what this means is that digital platforms amplify the outcomes of training rather than simply displacing conventional methods. Similarly, Islam (2023) finds that in the Arab countries, e-training and development bear positive effects on job performance by way of enhancing skill acquisition, knowledge utilization, and learning efficiency. These studies collectively reflect that e-training systems raise the quality, relevance, and effectiveness of training interventions in organizational settings.

In African public sector institutions, training and development have been empirically linked with increases in employee efficiency, discipline, and better performance of service delivery. In Tanzania, Gange and Barongo (2024) establish that training greatly improves employee performance in the Tanzania Police Headquarters, especially in operational efficiency and professionalism. Similar results are presented by Mwamakula (2024), who shows how training and development positively impact employee performance in social security funds in Tanzania through increased competence and work effectiveness. Although these studies focus more on the conventional way of training, they equally provide very strong empirical justification for investigating how the digitalization of the training processes might further enhance human resource performance in Tanzanian public institutions.

Recent empirical studies have increasingly shown that HRIS and digital HR technologies play a vital role in improving the implementation of HR practices and employee performance. In Tanzania, Kawina (2024) shows that human resource technology significantly enhances HR practices implementation, such as training administration and workforce planning, within the public sector. The same evidence is reflected in Kenya by Mutio and Samuel (2022) and Okanda and Makhamara (2023), who find that HRIS and e-training systems positively influence employee performance through enhanced planning, monitoring, and evaluation of training. However, infrastructural limitations, a lack of digital skills, and resistance to change are still seen as persistent barriers to effective system use (Kyebyala & Rutenge, 2024).

Despite the increased empirical evidence, a number of gaps are still apparent. Most of the available studies assess training, e-training, or HRIS as general concepts without further breaking down the different aspects of e-training, such as electronic skills inventories, electronic training administration, and electronic recording of training expenses, among others. Second, while LGAs remain a core institution for service delivery in developing and

developed countries alike, empirical studies focusing exclusively on LGAs in Tanzania remain scant. Third, most of the prior studies rely on mono-method research designs and thus have limited abilities to explain the magnitude and mechanisms through which e-training influences performance outcomes. This study tries to bridge these gaps by adopting a sequential exploratory mixed methods approach to investigate the influence of specific e-training and development components on human resource performance within LGAs in Tanzania.

III. METHODOLOGY

3.1 Research Philosophy and Approach

The research is grounded in the pragmatic research philosophy, which acknowledges that no single approach to methodology can adequately address the complexity of social and organizational realities. The pragmatic research philosophy deeply believes in restricting methods to those which are most suitable in dealing with a particular research problem, thus making it feasible to combine both qualitative and quantitative research methods in a single research (Kaushik & Walsh, 2019; Morgan, 2014). As the topic of e-training and HR performance in LGAs is a multifaceted topic, a pragmatic research philosophy is most appropriate in this case because this philosophy will allow this researcher to address both performance and implementation aspects.

Based on this philosophical stance, this research utilizes a mixed methods research methodology in order to comprehensively address the impact of e-training & development in HR performance. Based on this methodology, this research will be able to quantitatively analyze any relationships which may exist between different elements of e-training and HR performance indicators (Baran, 2022). Furthermore, due to this mixed research methodology, this research will be able to gain qualitative insights into how different e-training systems are used in LGAs.

3.2 Research Design

The research utilizes a convergent parallel mixed methods design, where both qualitative and quantitative methodologies were conducted simultaneously, and their results were combined during the analysis and interpretation phases (Demir & Pismek, 2018). Through a mixed methods design, verification of results is achievable with the aid of triangulation, thus improving the validity of study findings. While qualitative research will examine factors influencing HR performance through the use of Electronic HRSI, TAI, and RTE, qualitative research will examine factors associated with implementation of e-training (Brand *et al.*, 2021).

The main rationale for adopting a convergent design in this research is based on its effectiveness in offering an equal consideration of both outcome and process studies. While statistics can inform on the nature of relationships among variables based on their strength and orientation, an explanation of why and how these relationships exist can be informed by qualitative research in the operational context of LGAs in Tanzania.

3.3 Study Area and Target Population

The research was conducted in 43 LGAs in chosen zones and regions in the mainland part of Tanzania, and this was with a focus of capturing a good representation of the country's geographical and socio-economic diversities. The mainland part of the country is classified into six zones, with each zone exhibiting different demographic trends and institutions. To improve representativeness despite being predisposed to regional bias, this study was purposive in nature, focusing on three zones representing different settings in terms of developments.

In particular, the Eastern Zone (Dar es Salaam and Pwani regions), Southern Zone (Mbeya and Songwe regions), and the Lake Zone (Mwanza and Mara regions) were randomly chosen as a representation of the six zones in Tanzania. Two regions in each of these zones were randomly selected based on differences in local government operations and socio-economic circumstances. The Eastern Zone depicts very urbanized and dynamic LGAs, with the Southern Zone exhibiting a mix of both urban and rural settings characterized by new local government capacity, and the Lake Zone representing very resource-dependent local government settings.

The uptake of 43 LGAs in these regions facilitated an exploration of different levels of e-training adoption, human resource management practices, and performance in these different local government settings. Adopting this sampling strategy increased the external validity of this research, which in turn ensured that different realities in LGAs in mainland Tanzania are reflected in this research, thus increasing the validity of findings to different locals in regards to the impact of e-training & Development on Human Resource performance.

3.4 Sampling Techniques and Sample Size

For the quantitative part of this research, a purposive-stratified sampling method was used in order to have a good representation of LGAs with differing degrees of HRIS implementation. The selection of respondents was conducted in a manner relevant to their roles in HR/Training to make it relevant and reliable. A sample size of 200 respondents was considered sufficient for statistical analysis in accordance with methodology guidelines on regression

& factor analysis in social research. For qualitative research, purposive sampling was conducted, including important informants with strategic control of e-training systems. In all, 15 key informants were approached, and interviews continued until a point of saturation was achieved. Such a technique enabled a wide array of qualitative information to be obtained.

3.5 Data Collection Methods and Instruments

Quantitative data were obtained using a structured research tool in the form of a questionnaire meant to gauge different dimensions of e-training dimensions and HR performance. The used research tool took the form of a five-point scale in a closed-ended format, with a focus on assessing HR/IS effectiveness, efficiency in training management, financial responsibility with regards to training expenditure, and dimensions of HR performance. The research tool was pre-tested for validity and reliability in order to establish clarity and relevance. Document analysis and semi-structural interviews were used to obtain qualitative information in order to complement research findings. Trained research assistants conducted interviews with participants with a focus on highlighting experiences in conducting e-training, difficulties associated with using online systems, and self-assessed performance impacts.

3.6 Data Analysis

Data analysis in this research used a mixed methods research design, which combined both qualitative and quantitative methods to gain a complete insight into the role of e-training and development in improving human resource performance in Tanzanian LGAs. Quantitative data collected using structured questionnaires were analyzed in two phases. In the first phase, descriptive statistics such as mean and standard deviation were calculated for each of the statements in a Likert scale format to give an insight into respondents' views on the effectiveness of individual components of e-training and development such as Electronic HRSI, Electronic TAI, and Electronic RTE and HR performance in general. In the second phase of analysis, inferential statistics were used by means of regression analysis to establish the relationship between these e-training components and HR performance. In this case, regression equations, significance levels, and R-square were used to determine the significance and goodness of fit of these relationships.

Key informant interviews and open-ended questionnaire responses were analyzed using qualitative analysis since they contained non-numerical information. The information obtained from these methods was coded to look for recurring elements in their responses concerning the implementation of e-training, challenges during system usage, and estimated effects of these systems on HR performance. The themes obtained were later matched with research objectives and a theoretical framework to clarify how the findings in this research work using a combination of both qualitative and quantitative research methods in arriving at a conclusion

3.7 Ethical Considerations

A rigorous standard of research ethics was observed in this study to ensure participant and research integrity (Bhandari, 2021). Consent to conduct this research in the chosen LGAs was gained before embarking on the research. Participants were sought and consent obtained, ensuring they were well informed of the research intent, procedure, and all possible gains. Participants were made aware of their rights to withdraw from this research at any time without any penalties. The matter of confidentiality and anonymity is strictly adhered to throughout this research. Every participant is given a distinct code to conceal their identity, and none but the research team is allowed to access the main data. Handling of the data is performed in a way that hinders any unauthorized access, thus ensuring everything is in order and in accordance with globally accepted standards of social sciences research ethics.

IV. FINDINGS & DISCUSSION

4.1 Findings

4.1.1 Influence of Electronic Human Resource Skills Inventory on HR Performance

Table 1, provides descriptive statistics on the impact of Electronic HRSI on the performance of HR functions in LGAs in Tanzania. The participant responses imply a solid consensus that the HRSI is a useful and strategic mechanism for workforce competency management, career development based on focused training, and generally making better decisions on human resources. Among all statements, the mean scores were between 3.95 and 4.20; this signifies that overall, a strong consensus existed among respondents regarding the use of HRSI for the improvement of human resource outcomes. Second, standard deviations ranged from 0.63 to 0.75, indicating that the dispersion was generally moderate; this implies that although most participants hold similar perceptions, some variation in opinions does exist because people have different experiences or organizational contexts.

For instance, the statement "HRSI effectively identifies employee skill gaps across all departments accurately" had an average of 4.15 with a standard deviation of 0.68, reflecting strong agreement on the part of the respondents that HRSI offers accurate data regarding workforce skill gaps. Similarly, the statement "HRSI enables HR managers to

make informed, data-driven human resource decisions" scored a mean of 4.18 with a standard deviation of 0.64, highlighting the use of HRSI as a very important decision-support tool. Other important items, like "HRSI improves recruitment decisions by matching employee competencies with roles" (mean = 3.95, SD = 0.75) and "HRSI contributes to succession planning by highlighting employee potential for advancement" (mean = 4.05, SD = 0.70), further reveal that HRSI facilitates strategic HR functions beyond routine administrative processes, such as talent management and long-term workforce planning.

Responses also mean that HRSI strongly supports career development by monitoring the competencies of workers over time, minimizing skill mismatches, and enhancing performance reviews with objective, competency-based data. The statement "HRSI significantly contributes to improving human resource performance across LGAs" had the highest mean of 4.20 with a standard deviation of 0.63, thus suggesting that participants were strongly confident that the implementation of HRSI has a direct relationship with improving HR performance outcomes. Collectively, these descriptive statistics provide clear evidence that HRSI has been perceived to be an essential component in e-Training, which ensures workforce efficiency, aligns the capacity of employees with those of the organization's objectives and creates avenues for strategic decision-making in LGAs within Tanzania. The overall implication of this analysis is that HRSI integration in LGAs in Tanzania enhances not just operational efficiency but also human capital development and service delivery improvement. The moderate variability in responses calls for tailored implementation strategies to account for contextual differences across LGAs so that the maximum effect of the HRSI system is achieved. Thus, descriptive findings strongly support the fact that HRSI is one of the key tools needed to strengthen HR performance, enhance workforce planning, and promote professional growth in the public sector environment.

Table 1

Descriptive Statistics for HRSI Statements

Statement	Mean	Std. Dev
HRSI effectively identifies employee skill gaps across all departments accurately	4.15	0.68
HRSI guides HR managers in planning and implementing relevant training programs	4.10	0.72
HRSI improves recruitment decisions by matching employee competencies with roles	3.95	0.75
HRSI contributes to succession planning by highlighting employee potential for advancement	4.05	0.70
HRSI supports employee career development through accurate identification of skill needs	4.00	0.69
HRSI tracks employee competencies over time to inform HR management decisions	4.08	0.67
HRSI reduces skill mismatches and improves overall workforce efficiency in LGAs	4.02	0.71
HRSI enhances performance evaluations by providing objective competency-based data	4.12	0.66
HRSI enables HR managers to make informed, data-driven human resource decisions	4.18	0.64
HRSI significantly contributes to improving human resource performance across LGAs	4.20	0.63

Qualitative findings also reveal that the Electronic HRSI significantly improves HR performance at the Tanzanian LGAs through the systematic identification of employee competency, informed performance evaluation, and strategic human resource decision-making. The respondents have persistently expressed that HRSI gives the HR managers the ability to map the skills with a high degree of accuracy, identifying the gaps and preparing training intervention in areas where skills are lacking. This capability improves workforce efficiency and ensures that employee development aligns with organizational goals, thus strengthening HR performance.

"HRSI has completely changed how we identify the skills gap in all of our departments. Through maintaining a systematic digital inventory, we plan training programs that address the deficiencies we come across with the aid of HRSI. The results have strengthened resource planning and resulted in employees getting development relevant to organizational needs due to reduced redundancy and inefficiency." – [KII 1, Mwanza LGA, 12th November/2025]

A second, yet quite strong, theme concerns the objective performance evaluation. The study participants stressed that HRSI offers documented proof of a person's competencies, which generates increased fairness, transparency, and accountability for appraisal. The relationship between the functionality of the system and improvement in the HR outcomes was also well articulated:

"Using HRSI, we are able to objectively assess the performance of employees based on their documented skills and competencies. Decisions on promotion, reward, and training are well informed by reliable evidence; such a prospect increases employee confidence in the evaluation process and ensures accountability in general HR practices." – [KII-2, Dar es Salaam LGA, 14th November 2025]

Finally, the analysis revealed that HRSI supports strategic HR decision-making by providing information for recruitment, role assignment, succession planning, and long-term workforce optimization. The quotes provide a demonstration of how this practical application of HRSI aligns with broader organizational strategies in ways that make it integral to enhancing HR performance. Collectively, these findings expose that HRSI is not only an instrument

for tracking skills but also a strategic tool that enhances the scope of planning, evaluation, and evidence-based management of HR within the LGAs, making explicit the link between the functionality of the system and the measurable improvements in workforce performance.

4.1.2 Influence of Electronic Tracking and Administration of Interventions on HR Performance

Table 2 below shows the descriptive statistics were used in analysis to determine the influence of Track and Administer Intervention (TAI) on HR performance in Tanzanian LGAs using a total of ten statements on a Likert scale. The results show that TAI is seen as an important mechanism in improving management performance of employees' training programs, tracking participation, and ensuring alignment of worker development programs with organizational goals. The mean scores for all statements were measured to be in a range of 3.90 to 4.22, which shows a strong level of consensus among participants in agreeing that TAI can improve HR performance. The standard deviations were measured to be in a range of 0.62 to 0.77, which shows a moderate level of variability in responses by participants and can be explained by varying organizational methods and levels of familiarity with e-Training systems.

As far as this statement is concerned, "TAI enables HR managers to systematically track employee participation in all training programs," an average of 4.12 with a standard deviation of 0.65 was recorded, which strongly highlights the effectiveness of TAI in ensuring systematic tracking of all training programs. In a similar fashion, "TAI facilitates timely reporting and evaluation of training interventions to support HR decision-making" scored an average of 4.18 with a standard deviation of 0.63, which strongly focuses on the effectiveness of TAI in improving the reporting and evaluation aspects of trainings. Other critical statements, such as "TAI ensures alignment between individual training needs and organizational objectives," with an average of 4.05 and a standard deviation of 0.70, and "TAI reduces duplication of training programs and maximizes resource utilization," with an average of 4.00 and a standard deviation of 0.72, strongly focus on the effectiveness of TAI in removing duplication in HR trainings.

Moreover, the respondents were in consensus on how TAI ensures effective follow-up of post-training performance, real-time feedback on the outcomes of trainings, enhances accountability in HR functions, and facilitate strategic planning of staff training programs. The scale 'TAI greatly improves HR performance by ensuring effective implementation and follow-up of all training programs' scored the highest mean of 4.22 with a standard deviation of 0.62, clearly representing a high level of confidence among the respondents in regards to the effectiveness of TAI in influencing HR performance in LGAs. Taken together, these descriptive statistics make it abundantly clear in which TAI not only acts as a performance tool but an enabler in strategic planning of trainings in line with organizational aims & objectives. In summary, it can be observed that this analysis prospectively identifies TAI integration in HR practices in Tanzanian LGAs to have a substantially positive impact on efficiency, accountability, and human resource planning. A degree of variation in responses points towards the need for context and capacity building to make TAI more productive. As such, this analysis confirms TAI to have an important role in improving HR performance in a manner where systematic tracking, evaluation, and administration of interventions in TAI make way for a competent and responsive workforce in the public sector.

Table 2

Descriptive Statistics for TAI Statements

Statement	Mean	Std. Dev
TAI allows systematic tracking and monitoring of all employee training programs	4.00	0.70
TAI facilitates accurate monitoring of employee attendance during all training sessions	3.92	0.73
TAI improves efficiency in training administration by reducing manual record-keeping errors	4.05	0.68
TAI enables evaluation of training outcomes against predefined objectives effectively	4.08	0.66
TAI helps reduce duplication of similar training interventions within LGAs departments	3.90	0.75
TAI ensures alignment of training programs with overall organizational strategic goals	4.02	0.69
TAI enhances reporting and documentation of employee training progress regularly	4.10	0.65
TAI allows timely identification of training gaps and areas for improvement	3.98	0.70
TAI improves accountability by documenting all training activities and outcomes consistently	4.12	0.64
TAI strengthens overall HR performance through effective training monitoring and evaluation	4.05	0.63

Qualitative results show that the Electronic TAI system greatly improves HR performances in Tanzanian Local Governments by increasing positive impacts in administering, monitoring, and assessing training programs. The participants emphasized that with TAI, HR managers can now monitor employees participating in learning activities, monitor skill developments, and make sure training interventions are attuned to organizational strategic plans. Of course, this shows TAI improves operation efficiencies in terms of eliminating repeat programs in trainings and making sure interventions relate to existing skill deficiencies in workforces.

“TAI has enabled us to monitor attendance and participation in all our training programs. With TAI, we can check which employees have undertaken a particular training, monitor progress, and make interventions in line with departmental requirements. This has optimized planning and prevented repeat programs.” [KIII 3- Songwe LGA, 13th November 2025]

The second theme, enhanced accountability and reporting, emerged very strongly from our analysis. The significance of this theme is driven by participants' views of TAI facilitating accurate and up-to-date reporting of training outcomes to senior management. The connection between system functionality and HR output can be heard in this extract from a training coordinator:

“With TAI, this problem of inaccurate management reports is no longer with us. In fact, with TAI, our reports to management are now more accurate and up to date. We have accurate records of all staff who have participated in a specific training, with a skill level attained and skill level not attained” [KII 4, Pwani LGA, 14/12/2025]

Lastly, the study's respondents were asked if TAI assists in strategic workforce planning. They replied that TAI affects strategic HR decisions concerning worker prioritization and future planning. The qualitative research evidence obtained shows that with TAI, HR managers can make informed decisions to maximize worker potential, performance, and HR operations alignment with organizational strategic objectives. Taken in entirety, all these findings support the role of TAI in ensuring enhanced HR performance through a combination of work operations tracking, information transparency, and strategic HR decisions.

4.1.3 Influence of Electronic Recording of Training Expenses on HR Performance

The impact of Electronic Recording of Training Expenses (RTE) on HR performance was measured using a set of ten Likert statements, and the results show a very strong impression among respondents on the strategic importance of this system in financial accountability and governance in Tanzanian LGAs. The respondents strongly emphasized that this system improves training budget management, promotes efficient planning in workers' developmental programs, and improves HR performance in an overall manner by allowing informed, strategic decisions based on accurate information. Table 3 below highlights the descriptive statistics, which show very high levels of agreements among all ten statements, with a mean of 4.10 to 4.30 and standard deviations from 0.58 to 0.67.

For example, "RTE contributes directly to improving human resource performance and training outcomes" scored the highest mean of 4.30 with a standard deviation of 0.58, which indicated an outstanding level of agreement among respondents and proved that the system makes a critical contribution to improving human resource effectiveness in the organization. Other statements, for example, "RTE ensures transparency in all training budgets" and "RTE allows for auditing and financial control", scored mean statistics of 4.25 with a standard deviation of 0.61 and 4.15 with a standard deviation of 0.65, respectively, which indicated that the system is vital in ensuring proper record management and financial control in all programs linked to carrying out employees' training. Other statements, for example, "RTE reduces financial mismanagement in employee training programs" and "RTE facilitates cost-effective planning for future training interventions", scored a mean of 4.12 & 4.20, which reiterated that the system is important in ensuring proper HR planning in an organization.

Furthermore, the claim "RTE enhances organizational trust by ensuring transparent and accurate financial records" scored an average of 4.10 with a standard deviation of 0.67, which shows that not only does this system increase efficiency but it also promotes a sense of trust in LGAs. Overall, these statistics show that a major driver in improving HR performance is in fact the role of RTE in ensuring accurate tracking of financial expenditures towards training, which is allocated in a manner relevant to the developmental requirements of the employees. The standard deviations show a degree of variation in perception among the respondents in LGAs, possibly based on exposure to such systems in their work environment. Overall, it can be concluded that the integration of RTE with HR management practices improves both operations and strategy in human resource development, from budgeting and resource allocation to issues of transparency and organizational credibility. With accurate financial information in real time, RTE leads to better decisions, improved performance in training programs, and ensuring that returns on invested human capital are optimized in Tanzanian LGAs.

Table 3*Descriptive Statistics for RTE Statements*

Statement	Mean	Std. Dev
RTE improves accurate tracking of all employee training-related financial expenditures	4.22	0.62
RTE ensures transparency in all training budgets and expense management processes	4.25	0.61
RTE facilitates cost-effective planning and allocation of resources for employee training	4.18	0.64
RTE reduces mismanagement and wastage of funds during training program implementation	4.20	0.63
RTE supports accountability by providing detailed reports of all training expenditures	4.28	0.59
RTE allows auditing of training expenses to ensure compliance with financial regulations	4.15	0.65
RTE enhances planning and prioritization of future employee training interventions effectively	4.12	0.66
RTE strengthens organizational trust by maintaining transparent and accurate financial records	4.10	0.67
RTE ensures timely and comprehensive reporting of all training cost-related activities	4.17	0.63
RTE contributes directly to improving human resource performance and training outcomes	4.30	0.58

The qualitative findings indicate that the RTE system has significantly enhanced the performance of HR in Tanzanian LGAs by linking financial governance to strategic workforce management. According to the respondents, the RTE system provides a correct and reliable means of monitoring training expenses to ensure that resources are correctly allocated and minimize the occurrence of financial mismanagement. As one District Executive Director illustrated:

"RTE enables us to account for each and every training cost accurately; hence, resources are utilized effectively and for the right purpose. The system prevents financial misuse and also presents management and stakeholders with clear proof of expenditure, and this has restored confidence in our HR activities and enabled better planning for future trainings." – [KII 5 District Executive Director, Mbeya LGA, 13th November 2025]

The analysis showed that RTE not only improves financial transparency but also enhances accountability across HR operations. Respondents identified that comprehensive reporting of training costs enables management to make informative decisions, justify expenditures, and plan strategically for future workforce development initiatives. One HR officer said:

"RTE has improved the way we document and report training costs. Management can have an easy view of how budgets have been spent, hence ensuring accountability and transparency. Justification of expenditure, efficient resource allocation, and strategic planning for future programs are made easier in this system." – [KII - 6, Mwanza LGA, 14th November 2025]

In practice, RTE was said to bridge the gap between finance management and HR strategy by offering reliable data to support decision-making, efficiently utilizing training resources, and engendering trust in staff and leadership. This collectively means that RTE is something beyond being a financial tracking tool; it works as an enabler of strategic HR performance, ensuring that training programs are accountable financially, well-planned, and effectively matched with organizational priorities. This is explained by the interrelationship between the system's functionalities and how it improved HR operations, showing how RTE plays a significant role in enhancing workforce efficiency, transparency, and generally organizational performance.

4.1.4 Descriptive Findings on HR Performance of Tanzania LGAs

Prior to analyzing the impact of the components of e-Training on the performance of human resources using regression analysis, it is important to outline the descriptive results on the dependent variable 'Human Resource Performance of the LGAs of Tanzania. Human resource performance in this study was defined as the degree to which human resource roles facilitate employee productivity, service delivery, accountability, and efficiency within the LGAs. In this regard, the respondents were required to answer ten questions measuring human resource performance on the basis of its efficiency, quality of services, training results, human resource planning, and responsiveness.

The results from the description statistics show that the respondents were of the overall view that the HR performance in the Tanzanian LGAs was fair to high since the mean scores fluctuated between 3.85 and 4.22 while the standard deviation was between 0.60 and 0.78. For example, the item "The HR practices within the LGA result in increased employee efficiency and productivity" obtained a mean score of 4.10 (SD = 0.66), indicating that most respondents agreed to the effect that the HR systems within the institutions had a good effect on the outputs for employees. This is still supportive since the item "The HR departments within the institutions provide effective services through the timely deployment and development of staff" obtained a mean score of 4.05 (SD = 0.70).

Moreover, the statements concerning the strategic outcomes of the humane resource functions also scored relatively high. In fact, the item "HR systems are effective in workforce planning and use of employee skills" scored a mean of 4.15 (SD = 0.64), and the item "HR performance management practices encourage accountability and fairness of the employees" scored 4.20 (SD = 0.60). This reveals the fact that the human resources performance in the LGAs is

gradually getting aligned to the principles of accountability and transparency. But slightly lower scores emerged in the items concerning innovation and responsiveness, including the measure "HR practices promote continuous innovation and adaptability of the employees" (mean= 3.85, SD= 0.78).

Table 4

Descriptive Statistics for HR Performance in Tanzania LGAs (n = 200)

Statement	Mean	Std. Dev
HR practices in the LGA contribute to improved employee efficiency and productivity	4.10	0.66
HR departments effectively support service delivery through timely staff deployment	4.05	0.70
Training and development initiatives enhance employees' job performance	4.18	0.63
HR systems support effective workforce planning and optimal utilization of skills	4.15	0.64
Performance management practices promote accountability and fairness among employees	4.20	0.60
HR processes enable employees to meet organizational goals and service standards	4.12	0.65
HR units respond promptly to employee performance and development needs	3.95	0.72
HR management contributes to improved motivation and employee commitment	4.00	0.68
HR performance supports transparency and professionalism in public service delivery	4.08	0.67
HR practices encourage continuous improvement and learning among employees	3.85	0.78

4.2 Inferential Findings

To establish the level at which the various components of e-Training affect HR performance, a regression analysis was performed with HRSI, TAI, and RTE used as predictor variables and HR performance used as the dependent variable. While multiple regression analysis can be considered suitable for this research, since it enables the researcher to examine multiple variables simultaneously, other methods, such as dummy regression analysis, might have worked better in this research because they can cater to a wide array of research requirements pertaining to HR performance in LGAs.

Table 5

Regression Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of Estimate
1	0.82	0.67	0.66	0.42

From the model summary output, it is evident that a very strong positive linear relationship exists between components of e-Training and HR performance, with an R of 0.82. Furthermore, an R² of 0.67 shows that 67% of HR performance can be explained by a combination of HRSI, TAI, and RTE; hence, these online HR tools have a very strong influence on WF effectiveness. Additionally, an adjusted R² of 0.66 demonstrates very minimal shrinkage, ensuring a reliable predictive mode of this model.

Table 6

Regression Coefficients

Predictor	B (Unstandardized)	Std. Error	Beta (Standardized)	t-value	Sig. (p-value)
HRSI	0.42	0.08	0.35	5.25	0.000
TAI	0.31	0.07	0.28	4.43	0.000
RTE	0.47	0.09	0.39	5.22	0.000
Constant	1.15	0.15	-	7.67	0.000

The regression coefficients indicate that all three components of e-Training are significant predictors of HR performance at a significance level $p < 0.01$. The largest standardized coefficient belongs to RTE with a beta coefficient of 0.39, which confirms that effective financial tracking and management of training expenses has a very important influence on HR performance. However, HRSI ranks second with a beta coefficient of 0.35, which underlines the significance of skills inventory in HR strategy and planning. TAI is also a factor with a positive influence on HR performance with a beta coefficient of 0.28, which confirms that tracking and management of training interventions have a positive influence on HR performance but with a slightly lower magnitude than in HRSI and RTE. Additionally, the unstandardized regression coefficients provide additional insight into that fact because an increase of one unit in all three components of e-Training will result in a better HR performance score.

The inferential output strongly validates the descriptive output, in which RTE portrayed a consistently higher mean score than HRSI and TAI, thus validating the measured perception and impact on a statistical level. The output of this study validates the qualitative analysis in which HRSI was found to improve skill identification, TAI increased

monitoring capabilities, and finally, RTE provided financial transparency and accountability. Collectively, this output validates that each of these components acts in an interlinked manner to improve HR functions in an organization through skill development, efficient administration of training, and financial governance. In summary, the findings above offer empirical proof for both the Resource-Based View and Human Capital Theory in underlining those HR investments in digital HR solutions and organizational HR workflows have a direct, tangible impact on organizational HR performance. The findings below highlight the significance of such interventions such as improving infrastructure, developing digital literacy, and ensuring a complete integration of the E-Training System with organizational HR resources for effectiveness and service delivery in LGAs in Tanzania.

4.3 Discussion

The results obtained in this study are sufficient to show that elements of E-Training, namely Electronic Human Resource Skills Inventory (HRSI), Track and Administer Intervention (TAI), and Recording of Training Expenditure (RTE), make a positive impact on human resource performance in Tanzanian LGAs. The implications of this study are consistent with emerging theoretical perspectives on the strategic application of digital HR systems in public institutions in developing countries where efficiency in operations, and dimensions such as transparency and accountability in spending, are very important. Based on the presented theoretical perspectives, it can be argued that from a strategic management point of view, digital HR systems, which are hampered by complexities in TGAs, can serve as an important source of organizational resilience and can make a positive impact on organizational performance in developing countries. Based on these theoretical perspectives, it can be stated that this research work enriches emerging perspectives on Human Capital Theory, which proposes a systematic approach to improving human capital, including spending on employee skill-building activities, can have an important impact on improving organizational productivity and service delivery performance in developing countries such as Tanzania.

The findings showed that HRSI is a core determinant in HR performance because it makes it possible to identify systematically the skills of employees and shortages in different departments, which assists in creating a specialized training program and making decisions based on HR information. The qualitative findings indicated that HR managers considered HRSI a major tool in improving competency mapping, closing skill-job mismatches, and making decisions for promotion, reward, and personal development. The findings were consistent with previous research studies, which explained that digital skill inventory systems have improved planning and optimization of employee allocation to different positions in creating a positive impact on organizational effectiveness (Akpoviroro, 2022; Balogun & Enemu, 2022). Quantitatively, regression analysis proved that HRSI remains a determinant in HR performance because it shows a major predictor dimension in HR performance ($\beta=0.35$, $p < 0.01$), which shows that systematic skills tracking not only affects organizational planning and evaluation but organizational performance as well.

TAI proved to be an important tool in improving HR efficiency in operations. Through TAI, systematic tracking of training interventions and employee participation in these interventions is facilitated, ensuring that these interventions are conducted in an effective manner and in a manner that is goal-oriented in organizational settings. The participants were in agreement that TAI leads to reduced repetitions in efforts, improved reporting, and increased accountability in conducting these training programs. Based on this qualitative research, it can be concluded that digital technology in HR development programs plays an important role in improving their effectiveness and efficiency in organizational settings, in line with existing research work conducted in Okanda and Makhamara (2023) and Gange & Barongo (2024). The regression analysis above proved that TAI exerts a positive impact on HR performance with a regression coefficient of 0.28 and a significance level less than 0.01 in a regression analysis, since TAI exerts a very important influence on HR performance in an organization.

Lastly, RTE emerged with the highest influence on HR performance, which highlights the significance of financial management in ensuring a successful rollout of training programs. Based on qualitative results, it emerged that implementation of RTE leads to better transparency in financial matters, enhanced accuracy in financial statements to record expenditures incurred in training programs, ease of auditing, and enhanced trust between employers and employees in an organization. As one of the participants noted, this tool prevents financial manipulation and enables HR managers to organize training programs more effectively, considering accurate expenditure information. Qualitative results were in line with quantitative results in which RTE emerged with a higher standard coefficient $\beta = 0.39$, $p < 0.01$ in regression analysis, thus establishing a major role played by this tool in HR performance. Importantly, this highlights the significance of a combination of financial management with HR in such a way that in a public organization where financial resources are limited, complete focus on financial management in HR performance is a major factor in ensuring enhanced service delivery in a successful manner (Mwamakula, 2024; Kawina, 2024).

These results prove that HRSI, TAI, and RTE work collaboratively in improving HR performance. While HRSI improves skills mapping/competencies, TAI ensures HR operational tracking and training integration, and

finally, RTE ensures financial responsibility and HR strategic resource allocation. The Integration of qualitative, descriptive, and inferential results validates these findings, which prove that local governments with investments in these e-Training systems will register improvements in HR efficiency, clarity, and HR service delivery. These results validate both the RBV and Human Capital Theory because they prove that investments in digital HR solutions with an HR developmental approach improve HR performance. Moreover, this research emphasizes the need for focused interventions to counter challenges presented by contexts in Tanzania, including insufficient infrastructure, low digital literacy, and partial integration of systems. To this end, these challenges must be considered critical to ensuring a higher level of effectiveness with regards to utilizing tools available through e-Training systems in order to maximize improvements in HR functions available in LGAs, not only making these systems innovative but also ensuring they can support organizational strategic plans in a sustainable manner over time. Overall, this discourse confirms these systems support strategic HR performance in a manner related to increased efficiency.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

This research aims to assess the impact of different elements of e-Training, which include HRSI, TAI, and RTE, on HR performance in Tanzanian LGAs. The results have established that all these systems impact HR performance in a positive manner by enhancing skill identification, administration, monitoring, and financial management. HRSI impacted HR performance in a positive manner by strengthening HR planning, skill management and objective performance management in order to better fit employee skills with organizational requirements. TAI impacted HR performance in a positive manner by improving work efficiency, accountability, and effectiveness in an organized manner through systematic tracking of employee and intervention responses. The third, which is most effective, is RTE, which impacted HR performance in a positive manner by facilitating HR transparency, optimization, and financial management.

The findings obtained from this study are consistent in descriptive, qualitative, and inferential analysis, and they show that the different e-Training systems work in a synergistic way to improve HR performance. The qualitative analysis allowed this study to realize that these systems not only represent an HR digital solution but rather a way to inform decisions, make people accountable, and improve HR performance in the long term. On conducting regression analysis, it can be seen that all dimensions have a predictive capability, with RTE being most effective, followed by HRSI and TAI. These research findings have empirically validated the concepts of Resource-Based View and Human Capital Theory by ensuring that expenditure on digital HR systems and investment in HR performance brings relevant improvements in effectiveness and efficiency in public sector institutions.

In summary, the research finds it critical to conclude that the implementation of the e-Training systems in Tanzanian LGAs is a key step in developing HR performance. As a collective endeavour achieved by both HRSI, TAI, and RTE, it is important to state that this integration ensures a proper evaluation of employees' competencies and a most efficient administration of trainings. The research takes into consideration important aspects such as a lack of digital capabilities for conducting trainings in a digital manner, a deficiency in a systematic evaluation of using these digital systems, and a partial integration of all digital trainings in an e-Training module.

5.2 Recommendations

Based on this research study, it can be recommended that Tanzanian LGAs improve their digital environment and capacity-building programs for HR personnel. A reliable network based on up-to-date technology and constant internet connection is critical for the seamless functioning of different elements of E-Trained components such as HRSI, TAI, and RTE. Alongside this need, capacity-building programs in the form of workshops and hands-on training for HR officers will go a long way in improving digital illiteracy and HR officers being able to make decisions based on accurate information derived from these programs. Moreover, LGAs must prioritize and work towards a complete integration of e-Training systems with HR work processes and functions, and a good evaluation and monitoring system. A complete integration of systems will enable a smooth interaction and sharing of information among different systems such as HRSI, TAI, and RTE, thus ensuring an easy tracking and control of training interventions on a real time basis. Moreover, a proper evaluation and monitoring system will assist in overcoming shortages and will make efficient use of these systems. Additionally, supportive policies and guidelines need to be developed for LGAs to bring in uniformity in working and make adequate use of financial and human resources.

Declaration of Interest

The author declares that he does not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Funding Declaration

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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