

Effect of E-HRM on HR Efficiency in Private Commercial Banks of Tanzania

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Abstract

E-HRM is the most sought-after topic in literature and practice. Though E-HRM is essential in the current global technology scenario, its full potential is still being anticipated and, therefore, academic involvement in the topic needs to grow. This paper reports the findings of a study that sought to find out the effect of e-HRM on HR Efficiency in Tanzania's private commercial banks. It used a quantitative approach to gather empirical data using a structured questionnaire and analysed using PLS-SEM of SmartPLS. Using a cross-sectional survey design, the study gathered data from purposively sampled employees in private commercial banks. It found that e-HRM positively influences HR Efficiency. As such, organisations in developing countries such as Tanzania can benefit from e-HRM to achieve their goals. Prior to e-HRM adoption, the HR role and workforce must be prepared to fit with e-HRM goals and the expected outcomes. The study's positive findings can facilitate HR's effort to make the most out of e-HRM systems by stressing the influence of HR role and IT usage. Originality is that e-HRM outcomes are multiple and crucial for organisations nowadays; however, extant evidence is scarce in the field of e-HRM. Most factors and consequences of e-HRM were identified in case studies and do not yield 'hard' evidence. This implies that the field of e-HRM requires much more grounding before it can become a mature research tradition. Overall, the study contributes to extant literature by adding an e-HRM framework for examining HR efficiency with the use of the prominent TAM model.

Keywords: Electronic Human Resource Management, Human Resource Efficiency, Technology, Human Resource Management, Technology Acceptance Model

Introduction

Organisations are now regularly utilising IT platforms such as e-HRM to improve their business performance. As organisations have been subjected to some far-reaching and dramatic changes because of the various implications of the web-based establishments (Paauwe *et al.*, 2005), E-HRM delivers the HR occupation by providing an opportunity to generate innovative ways of boosting business efficiency (Lengnick-Hall & Moritz, 2003). The overall situation at the beginning of the 21st century is that e-HRM in developed and developing nation's shows that the application of technology could cut human resource transactional costs by up to 75 percent and recoup costs associated with the implementation of this technology in less than two years (Bell, Lee, & Yeung, 2006). In addition, 67 percent of companies reported that technology has improved the overall organisational efficiency and 70 percent reported improvements in the quality and timeliness of human resource services to employees (Bell *et al.*, 2006). The

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innovation of IT in organisation offers opportunities for conducting business in novel ways that differ from the practices of the past. Many more studies have proved that IT plays a crucial role in both public and private organisations (Gardner *et al.*, 2003; Kohli & Devaraj, 2003; Melville *et al.*, 2004; Staples & Seddon, 2004). In consequence, many organisations invest more than 4.2 percent of their incomes in the implementation of IT (Weill, Subramani, & Broadbent, 2002, developing countries no exception).

The key motivators for institutions to embrace Information and Communication Technology (ICT)-driven HR solutions are the necessity for cost efficiency and time-saving (Yeung & Brockbank, 1995). As Parry (2011) contends, the application of e-HRM facilitates modification in the HR role while enhancing output. Yet, many developing nations still lag behind in growing and utilising e-HRM despite the advantages it engenders (Walinda, 2013). Bondarouk and Ruel (2009) further argue that businesses often reject declaring their authentic accomplishment of e-HRM goals. Most of the studies on e-HRM are in the public sector and in small and medium enterprises, which could explain why it was hard to trace a study on private organisations for developing countries such as Tanzania (Marchington *et al.*, 2005). Nevertheless, the HR function remains vital in any organisation in managing human capital, people who are key elements in steering the organisation towards success.

For private organisations, the human element assumes an even more significant profile as these organisations provide service to all other people not covered by public enterprises. Extant literature attests to the centripetal role technology plays in enhancing human resource management (Asogwa & Ezema, 2012). Researchers such as Strohmeier (2007), Chapman and Webster (2003), Mnjama and Wamukoya (2007), and Chinyuka (2018) undertook empirical studies on e-HRM theories, principles and frameworks, among others. However, most of these studies focused on e-HRM use and adoption in the public service as strategy for addressing challenges encountered during manual system operations, which include fraud of payroll (ghost-workers), corruption, high turnover and unqualified civil servants. Some studies also focused on few specific areas such recruitment/data access etc., but paid little attention to the macro-level where employees influence the overall HR efficiency, hence the need to reduce this gap by proposing a model for e-HRM application and its effects on HR efficiency.

Since the beginning of the 21st century, technology has changes the way people work in different sectors around the globe, including in developed economies. In Africa, e-HRM is rather new and, therefore, its application in organisations is inevitably dogged by challenges (Ngai & Wat, 2006). There are also concerns over change management and technology acceptance by HR practitioners (Martin *et al.*, 2006). Since the 1990s, the use of technology in Tanzania's organisations has initiated a series of modification measures to transform them into more efficient, effective and customer-oriented institutions. For human resource management, these efforts have put in place foundations for e-HRM, while reforms continue for optimal utilisation of ICT (International Records Management Trust, 2007). However, the e-HRM adoption has been generally slow with various challenges standing in the way (International Development research, 2009). Moreover, most of these technology reforms and e-HRM reforms have largely occurred in the public sector and have attracted many studies. As a result, developments in private organizations have largely been ignored, hence hardly attracting scholarly scrutiny. In developing countries, such as Tanzania, there is a necessity to transform HR operations from

manual paper-based to electronic operations (Mnjama & Wamukoya, 2007). To curb this knowledge vacuum, this study proposes an e-HRM framework for examining the HR efficiency in private commercial banks of Tanzania as a valuable tool for supporting businesses in executing e-HRM action plans.

Like any country, private organisations in Tanzania play a vital role in its economic development (Myovella *et al.*, 2018). According to the joint Tanzania investment report by the Bank of Tanzania (BoT), the Tanzania Investment Centre (TIC), and the National Bureau of Statistics - NBS (2018), Tanzania's Foreign Direct Investment (FDI) increased by 24.2 percent in 2017 compared to 2016 (Nyoni, 2019). The increase in FDI has created a lot of jobs in both the private and public organisations of the country (Myovella *et al.*, 2018). Moreover, this increased foreign investment simultaneously brings private organisations into the lime light, after being side-lined for many years in the post-1967 period following the Arusha declaration when the country embarked on a socialist path (Ujamaa) to the 1990s when reforms made the country adopt neo-liberal policies. The resultant increased workloads on HR and pushed them towards seeking innovative ways of easing the pile-up, hence recourse to e-HRM (URT, 2019). The application of e-HRM in private enterprises in the face of heightened workloads motivated this study.

E-HRM

E-HRM refers to a practice of technology in HR (Human Resource) or HR done by electronic means (Hopkins & Markham, 2006). According to Lepak and Snell (1998), e-HRM can be divided into operational, relational, and transformational functions. Operational e-HRM, involves the elementary HR actions in the administrative capacity which include payroll, attendance registers, employment terms and procedures, employee profiles, company policies. Relational e-HRM, on the other hand, involves further developed HR actions such as recruitment, selection, performance management, and training. HR actions under transformational functions include knowledge management, strategic re-orientation, organisation change process, strategic competence management, is the last area of e-HRM which is termed as transformational (Ruel, Bondarouk, & Looise, 2004).

HR Efficiency

Most HR practices are largely driven by internally referenced organisational efficiency-focused approaches (Mariappanadar, 2012). The ability to run HR processes in the right way and on time in a cost-effectively is known as HR Efficiency (Carlson & Kavanagh, 2011). Scientifically, HR efficiency refers to output to input ratio whose emphasis is on receiving the utmost output with the least means. In this regard, Crestone (2009) underscores the value of monitoring the efficiency of HR, and properly managing the associated tasks of an organization in an HR system, particularly as a fundamental aspect of an organisation's hi-tech infrastructure. According to Boudreau and Ramstad (2002), the metrics for assessing HR efficiency include time saving and cost efficiency in the HR function.

Theoretical Review: TAM

Applying the Technology Acceptance Model (TAM), which was crafted in 1989 by Davis (Venkatesh *et al.*, 2000) that informed the study entails puts intonation on information technology usage, e-HRM in this study. More significantly, TAM has also been applied in voluminous studies on management information systems and ICT usage because of its suitability

(Khatoon, 2012; Yusoff *et al.*, 2015; Dosajh *et al.*, 2012). Using the TAM theory, Khatoon (2012) examined e-HRM adoption in India and found positive results of operational e-HRM, relational e-HRM and transformational e-HRM in government hospitals. Hence this research applied TAM because it has been empirically tested and has a proven track record of supporting validations, applications, and replications in such studies (Venkatesh *et al.*, 2000; Schaup *et al.*, 2010; Lee, 2010; Yusoff *et al.*, 2010). In fact, TAM is one of the most powerful and parsimonious models in the IS context (Bueno & Salmeron, 2008). According to Venkatesh *et al.* (2000), the parsimony of TAM combined with its predictive power facilitates its application in different situations.

Empirical Literature and Hypothesis development

Yusoff *et al.* (2010) adopted TAM to examine the relationship between HR roles and e-HRM. Their findings suggest that e-HRM positively influenced HR roles and determined attitudes of HR professionals towards E-HRM. Yusliza *et al.* (2012) in their study established that e-HRM goals positively correlate with facilitating conditions that can influence attitude change amenable to technology adoption and use. Also using TAM, Erdogmus *et al.* (2011) study on the effect of e-HRM on technology acceptance found positive results for the achievement of HR goals.

Generally, the literature review shows that many studies have dealt with electronic management in the development of human resource in many organisations of various developed and a few developing countries (Strohmeier, 2007; Chapman & Webster, 2003; Mnjama & Wamukoya, 2007). However, most of the previous studies were conducted in the public sector such as ministries and universities and largely outside Tanzania. As such, this study was conducted in Tanzania's private commercial banks. Moreover, studies that have been carried out in developing countries, Tanzania inclusive, indicate a need for additional scrutiny of the use of e-HRM (Walinda, 2013). Furthermore, factors linked to e-HRM are not static but dynamic, hence a need to examine them from time to time. Additionally, the variations made in technology processes necessitate new studies.

Operational e-HRM

Researchers agree that Operational e-HRM include payroll, attendance registers, employment terms and procedures, employee profiles, company policy (Khatoon, 2012). Empirical examinations have upheld the benefits accruing from e-HRM (Ruel *et al.*, 2004; Strohmeier, 2007; Ruta, 2005). In fact, empirical validation in the literature in the form of cost and time savings has been made of the operational e-HRM consequences (Kossek *et al.*, 1994; Sturman, Hannon, & Milkovich, 1996). E-HRM leads to efficiency gains, and most researchers in the past advocated for e-HRM's strong contribution to the company's bottom line (Beulen, 2009; Buckley, Minette, Joy, & Michaels, 2004; Chapman & Webster, 2003; Jones, Brasher, & Huff, 2002; Oiry, 2009; Olivas-Lujan *et al.*, 2007; Panayotopoulou *et al.*, 2007; Ruel, Bondarouk, & Looise, 2004; Svoboda & Schröder, 2001). Literature suggests that operational e-HRM ensures both cost and time savings, including the performance of HR work by fewer personnel instead of bloated money consuming numbers. Martinsons (1994) found that e-HRM usage freed professionals for superior tasks by automating routine tasks such as payroll and attendance in addition to availing employment terms and procedures, employee profiles, company policy on company's intranet. However, there was serious disagreement among researchers. For example, Reddick (2009) did not find support for the relationship between operational e-HRM and cost

savings. Thus, to make meaningful inferences there is a need to test statistically the relationship between operational e-HRM and HR efficiency in Tanzania's private commercial banks, which makes us hypothesise:

H₁: Operational e-HRM has a positive relationship with HR Efficiency.

Relational e-HRM

Besides operational e-HRM benefits, relational e-HRM positive consequences are increasingly acknowledged in the literature (Kossek *et al.*, 1994). Relational e-HRM includes recruitment, selection, performance management, and training (Khatoon, 2012). It focuses on how technology supports the course of HR actions (Snell *et al.*, 1996), which delivers results and factors in cost and time savings. For instance, HR evaluated applicants who used the Internet for job applications more positively than those using paper walk-in applications in terms of progressiveness, creativity, and innovativeness (Eddy *et al.*, 1999). Relational consequences were detected in improved communication, co-operation, relationships, and HR service improvements. Reddick (2009) observed how e-HRM boosts employee awareness, appreciation and use of HR programmes. Hussain *et al.* (2007) verified the positive attitudes of HR professionals who perceived e-HRM as a crucial and enabling technology. Overall, e-HRM was reported as beneficial to employee performance (Panayotopoulou *et al.*, 2007; Voermans & van Veldhoven, 2007).

Moreover, e-HRM was even found to affect employee training positively. In this regard, Beulen (2009) documented how employees working in different cultures had different e-HRM preferences, which made it essential to adjust to these needs to train and retain talented employees. Employee attraction and retention were found to be indirectly influenced by e-HRM, presumably because its use positively shaped the company image (Feldman & Klaas, 2002). In fact, organisations using the latest technology were viewed as modern and progressive by employees (Allen, Mahto, & Otondo, 2007; Panayotopoulou *et al.*, 2007). Ruel *et al.* (2004). Furthermore, e-HRM enhanced the visibility of career paths, which enabled employees to better choose how they could boost a company's image (Neary, 2002). Conversely, Hannon *et al.* (1996) recognised negative relational e-HRM results such as practical dependency on external firms for maintenance, support and system extension, if outsourced, and particularly in the resource-constrained contexts. Bondarouk, Ruel and van der Heijden (2009), and by Gardner, Lepak and Bartol (2003) provide proof of developments in HR attributable to relational e-HRM. Based on the arguments advanced thus far in relation to the positive attributes associated with relational e-HRM, we hypothesise:

H₂: Relational e-HRM has a positive relationship with HR Efficiency.

Transformational e-HRM

IT that supportive of business renovation constitutes transformational IT (Snell *et al.*, 1996). Transformational e-HRM includes knowledge management, strategic re-orientation, organisational change process, and strategic competence management (Khatoon, 2012). Manifestations of transformational consequences include HR globalisation, for example, integration of decentralised units and consistency of HR practices (Broderick & Boudreau, 1992). Initially, the research focus of scholars had shifted from operational in the 1970s and

1980s to relational consequences in the 1980s and, finally, to transformational consequences of e-HRM in the last decade (Marler, 2009). In our view, this transformation in perspective is attributable to organisations changing tact from HRIS to e-HRM, with applications largely targeting—to a greater extent—to internal customers. Since HR professionals started to budget and spend more time on transformational activities (Gardner *et al.*, 2003), they progressively dealt with organisational change, and strategic competence management (Lievens, De Corte, & Westerveld, 2015; Reddick, 2009). As they become more engaged in organisational change activities they increasingly emerge as business partners (Haines & Lafleur, 2008), and their competence becomes anchored in business issues (Bell *et al.*, 2006), risk management, innovation (Ruel *et al.*, 2004), and horizon scanning (Guechtouli, 2010).

Additionally, E-HRM has enabled professionals to adopt HR strategic re-orientation decisions (Cronin *et al.*, 2006) and to effect positively HR planning (Beulen, 2009). The strategic potential of e-HRM to support the strategic evolution of an organisation by transforming HR from merely being administrative to strategic partners ensures time and cost saving (Bell *et al.*, 2006; Panayotopoulou *et al.*, 2007; Reddick, 2009). Usually, organisations exploit information from e-HRM for sophisticated analysis and advanced reporting. For employee planning, e-HRM plays an instrumental role in storing, aligning, and managing employee data while providing a flexible platform for employees to meet their training and development needs. E-HRM also boosts knowledge management in organizations as it supports enhanced knowledge creation, capture, transfer and use (Reddick, 2009). Ruel *et al.* (2004) reported that a more open culture was the positive consequence of e-HRM. On the other hand, transformational e-HRM has failed to achieve its capacity in assisting further the strategic part of the HR function, particularly to achieve cost saving results, as Tansley, Newell and Williams (2001) have observed. Nevertheless, based on the arguments on transformational influence examined thus far, we hypothesise thusly:

H₃: Transformational e-HRM has a positive relationship with HR Efficiency.

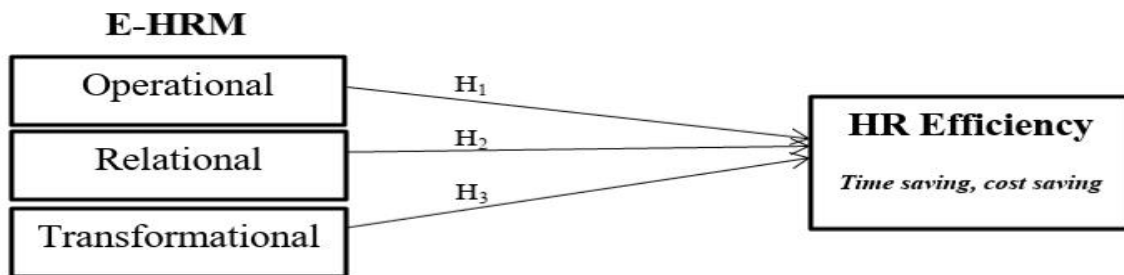


Figure 1: Conceptual Framework on the relationship between E-HRM and HR Efficiency

Source: Developed from the theoretical and empirical review (Researcher 2020)

Methodology of the Study

Confirmatory factor analysis was performed to confirm the study variables. The test found that all the standardised regression weights reported in the CFA output were above the recommended cut-off point 0.50 (Kline, 2010). Thus, the model in this study was good as they meet the accepted cut off point. Data was analysed using descriptive statistics and Partial Least Squares

Structural Equation modelling (PLS-SEM) assisted with SmartPLS. A two-step modelling technique helped to establish the quality of items. The items help to measure and estimate the relationship between models. The approaches are the measurement and structural models. The study was conducted on Tanzania’s private commercial banks. Using a cross-sectional design, the study collected quantitative data from 82 employees mainly staff drawn from the country’s private commercial banks.

Study findings

Profile of the respondents

Though the demographics frequency has been presented Table 1, the study did not used demographics to determine their relationship with HR Efficiency. Instead, demographics have been presented here primarily to show the composition of respondents to have a better understanding of their responses and results of the present study. Gender-wise, there was almost parity, with the female respondents enjoying a slight numerical advantage (F: 42, 51%; M:40, 49%). Moreover, the majority had tenure of less than five years in their respective organisations. Furthermore, the most (73.2%, n=82) of the respondents graduate qualifications—48 (58.3%) with undergraduate degrees and 12 (14%) with postgraduate degrees at the master’s level. Such qualifications are consistent with the current labour trend in Tanzania. Age-wise, which is an important demographic in the present study as having a higher age tends increase work-technology conflict situation, the majority of the respondents were aged between 18 and 30.

Table 1: Demographics

	Description	Frequency	Percent
Gender	Male	40	48.7
	Female	42	51.21
Age	18 to 30 years	42	51.21
	31 to 55 years	38	46.34
	56 years and above	2	2.43
Tenure	1 to 5 years	37	45.12
	6 to 15 years	35	42.62
	16 years and above	10	12.19
Qualification	Diploma and other certificates	22	26.82
	Degree	48	58.53
	Masters	12	14.63

Measurement Model

Structured questionnaire was tested for reliability using Cronbach’s Alpha, which tested for the reliability of all the parameters in the subsections of the research instrument, for operational e-HRM, relational e-HRM, transformational e-HRM and HR efficiency. The reliability analysis scale in the Table 2 shows that all the constructs (operational e-HRM, relational e-HRM, transformational e-HRM and HR efficiency) met the required level of the Cronbach’s Alpha since they were above 0.70 (Field, 2009). Convergent validity is measured by the average variance extracted (AVE) for all items associated with each construct. The AVE value is calculated as the mean of the squared loadings for all indicators associated with a given construct. A satisfactory AVE is 0.50 or higher, as it indicates that on average, the construct explains over 50 percent of the variance of its items (Sarstedt, Wilczynski, & Melewar, 2013).

As per this criterion, the convergent validity of the measurement model can be measured by the Average Variance Extracted (AVE) and Composite Reliability (CR) as presented in Table 2. The results show that values of all the constructs fall between 0.501 and 0.612 whereas the composite reliability (CR) values range between 0.829 and 0.881. Thus, constructs have high levels of convergent validity.

Table 2: Validity and Reliability Measurement of Constructs

	Cronbach's Alpha	Composite Reliability	AVE
Operational e-HRM	0.774	0.829	0.501
Relational e-HRM	0.832	0.87	0.588
Transformational e-HRM	0.787	0.845	0.612
HR Efficiency	0.848	0.881	0.553

On the other hand, discriminant validity is assessed by examining the cross loadings. The rule of the thumb here is that an indicator variable should display a higher loading on its own construct than on any other construct included in the structural model (Hair *et. al.*, 2014). If the loadings of the indicators are consistently high on the construct with which they are associated, then the construct exhibits discriminant validity. Results in Table 3 show the true measures of their respective variables, namely Operational e-HRM, Relational e-HRM, Transformational e-HRM and HR efficiency. The assessment of loadings and cross-loadings in Table 3 attest to discriminant validity.

Table 3: Discriminant Validity

	HR Efficiency	Operational e-HRM	Relational e-HRM	Transformational e-HRM
HR Efficiency	0.676			
Operational e-HRM	0.65	0.695		
Relational e-HRM	0.663	0.666	0.786	
Transformational e-HRM	0.609	0.609	0.731	0.745

Structural Model

After ensuring that the measurement model was satisfactory, we then progressed to the structural model. Assessing the level of collinearity among formative indicators requires computing each item's variance inflation factor (VIF). A higher VIF implies a greater level of collinearity. As a rule of the thumb, VIF values of above five are indicative of collinearity amongst the indicators (O'brien, 2007). The Variable Inflation Factor (VIF) calculated using SmartPLS for each of the independent variables in the study ranges from 1.86 to 2.89, which satisfies the rule of thumb for VIF.

Table 4: Collinearity (VIF)

Constructs	HR Efficiency	Collinearity Problem? (VIF>5?)
Operational e-HRM	2.89	No
Relational e-HRM	1.86	No
Transformational e-HRM	2.67	No

The R² is a measure of the variance explained in each of the endogenous constructs and is, hence, a measure of the model’s predictive accuracy. R² values of 0.75, 0.50 and 0.25 may be considered substantial, moderate, and weak, respectively (Hair *et al.*, 2014; Henseler *et al.*, 2009). As Table 5 illustrates, the R² value in this study is 58.4 percent, which inclines towards moderate, using Chin’s (1998) criteria. Table 5 further shows that all the hypotheses were accepted as they possessed a t-value greater than or equal to 1.645 and with p-value of less than or equal to 0.01. Operational e-HRM had t-value of 2.463 and p-value 0.001; Relational e-HRM had t-value of 3.068 and p-value 0.002; and Transformational e-HRM had t-value 3.774 and p-value 0.000, which indicate that all the e-HRM hypotheses were supported in the study.

The results also show that Operational e-HRM, Relational e-HRM and Transformational e-HRM were significant drivers. E-HRM had a significant effect on HR Efficiency. From Table 5, it is evident that three of the relationships are significant, hence confirming our hypotheses about the construct relationships. The coefficients in Table 5 enable us to determine that Transformational e-HRM has the strongest effect on HR Efficiency (0.390), followed by Operational e-HRM (0.289) and then Relational e-HRM (0.186).

Table 5: Loadings of the relationship between dimensions

	R ²	Coefficient	Mean	Standard Deviation	t-Values	p-Values
Operational e-HRM	0.584	0.289	0.25	0.091	2.463	0.001
Relational e-HRM		0.186	0.322	0.105	3.068	0.002
Transformational e-HRM		0.39	0.34	0.093	3.774	0

Correlation matrix was used to verify the existence of the relationship between the independent variables i.e. e-HRM (Operational, Relational and Transformational) and the dependent variable HR Efficiency. The acceptable range for correlation is below 0.85 (Bagozzi *et al.*, 1991; Hair, 2010; Awang *et al.*, 2015; Afthanorhan *et al.*, 2014; Afthanorhan *et al.*, 2018). In Table 6, the correlation matrix indicates that Operational E-HRM correlates with HR Efficiency (0.609, **p<.05); Relational E-HRM correlates with HR Efficiency (0.667, **p<.05) and Transformational E-HRM correlates with HR Efficiency (0.663, **p<.05) in Tanzania’s private commercial banks under review. Hence the E-HRM (operational, relational, and transformational) has a significant effect on HR Efficiency in the country’s private commercial banks.

Table 6: Correlational Matrix

Correlation Matrix				
	HR Efficiency	Relational	Operational	Transformational
HR Efficiency	1	0.667	0.609	0.663
Relational	0.667	1	0.613	0.595
Operational	0.609	0.613	1	0.538
Transformational	0.663	0.595	0.538	1

Testing of Hypotheses

PLS-SEM was used to study the nature and magnitude of relationship between the dependent and independent variables. The PLS-SEM was conducted on the model using SmartPLS to test the formulated hypotheses. The hypothesised research model was suitable with observed data. All the hypothesised paths are supposed to be significant at p value less than or equal to 0.01 to be supported, otherwise the hypothesis will be not supported by the model. The evaluation of the model shows relationships. In all, three hypotheses were tested between the predictors and the criterion variables. The direct path relationship reflects the direct effect of the latent variables on the dependent variable. When using SmartPLS, the relationships between constructs can be determined by examining their path coefficients and related T-statistics via the bootstrapping procedure.

Table 7: Testing of Hypotheses

Hypothesis	Relationship	Conclusion
H ₁	Operational E-HRM -> HR Efficiency	Supported
H ₂	Relational E-HRM -> HR Efficiency	Supported
H ₃	Transformational E-HRM -> HR Efficiency	Supported

Table 5 provides the results of the analysis of the model, which helps to draw conclusions on the three hypotheses in Table 7. E-HRM is significant at level of significance. The R² of model is 58.4%, which implies that E-HRM (operational, relational, and transformational) can explain 58.4% changes in the HR Efficiency in Tanzania's private commercial banks under review, which supports the broad purpose of this study. Thus, we found E-HRM to be significant. If E-HRM is properly implemented by organizations in Tanzania, then they can get multiple benefits in return. The results of the analysis support the theoretical model. The results also support the three hypotheses (H₁, H₂, and H₃).

Operational E-HRM and HR Efficiency: The first hypothesis of this study was that *Operational E-HRM has a positive relationship with HR Efficiency*. This assumption entailed examining the extent to which Operational E-HRM influences HR Efficiency. The overall analysis shows that there is a strong positive relationship between Operational E-HRM and time and cost savings in private commercial banks of Tanzania. Since the p-value for this variable was 0.001, it signifies that that the correlation between the variables is significant at the 0.01 level. Hence, this study demonstrates that when Operational E-HRM is considered and applied, HR Efficiency results are positively related to it.

Relational E-HRM and HR Efficiency: The second hypothesis of this study was that *Relational E-HRM has a relationship with HR Efficiency*. In this regard, the study sought to establish the extent to which Relational E-HRM influences time and cost savings. The study established a p-value of 0.002, which is significant at the 0.01 significant levels. The results, thus, show that the Relational E-HRM is positively related to HR Efficiency.

Transformational E-HRM and HR Efficiency: The third hypothesis of this study was that *Transformational E-HRM has a relationship with HR Efficiency*. Towards this end, the study examined the extent to which Transformational E-HRM influences time and cost savings. The

result affirm a strong positive relationship between Transformational E-HRM and HR Efficiency with the relationship being significant enough in the operational context of Tanzania's private commercial banks. Specifically, the t-value obtained is 3.774, which indicates that Transformational E-HRM does affect HR Efficiency.

Discussion

E-HRM and HR Efficiency

This paper has presented the results of a study that had examined the influence of e-HRM use on HR Efficiency in Tanzania and, specifically, the influence of Operational e-HRM, Relational e-HRM and Transformational e-HRM on HR Efficiency. The subsequent sections further discuss the research findings from quantitative analysis using PLS-SEM by SmartPLS in relation to the theory and findings ascertained in other contexts.

Operational E-HRM and HR Efficiency

The first examination of this study proposed to examine the effect of Operational e-HRM on HR Efficiency in Tanzania's private commercial bank. In earlier studies, operational e-HRM has emerged to be a key dimension of e-HRM that affects HR functions (Khashman *et al.*, 2015). Additionally, previous studies have argued that operational e-HRM is an important element that influences HRM. For instance, Khashman *et al.* (2015) found a positive, statistically significant effect of operational electronic human resource management dimensions on the dimension of HRM performance. Operational magnitudes have generally been studied and empirically authenticated to yield positive results (Kossek *et al.*, 1994; Sturman, Hannon, & Milkovich, 1996).

The overall analysis shows that there is a strong positive relationship between the operational outcome variable and the HR Efficiency of an organisation in Tanzania's private commercial banks. One of the chief functions of an HR department is to manage the human resource while considering the organisation's cost and time constraints. Private commercial banks, being a service industry, are teeming with people. Thus, for the HR department to manage them effectively, HR managers must take efficient strides including effective technology application. Hence, an e-HRM application ought to facilitate the realisation of the main time effectiveness, on the one hand, and cost-reduction, on the other. Earlier studies have indicated that efficiency and operational performance remained the most common goal for introducing e-HRM (Parry & Wilson, 2009). In other words, the use of e-HRM has a strong positive relationship with reducing the cost of HR and improving efficiency of HR functions and is optimistically related to easing the administrative burden and attendant costs while saving time (Bell, Lee & Young, 2006).

Yet, conflicting results have also established that HR appears to have a rough relationship with technology, with only a few truly having an insight into the possibilities offered (Foster, 2008; Karakanian, 2000). This research underscores the importance of enhancing efficiency HR using e-HRM. Therefore, the operational outcome is a factor that significantly influences the HR efficiency in the HR department of Tanzania's private commercial banks under review. Congruent with results of this study, most of the studies have mentioned both cost reduction and time saving as desirable consequences of e-HRM application (Hempel, 2004; Foster, 2008; Payne *et al.*, 2009). Specifically, the current study indicates that operational e-HRM has a

significant positive relationship with HR efficiency, hence consistent with most of the earlier studies already discussed in this section.

Relational e-HRM and HR Efficiency

The second examination focal point of the study was to establish the extent to which Relational e-HRM influences HR Efficiency in Private commercial banks in Tanzania. A study by Atallah, (2016) shows that e-HRM has a positive effect on organisational development as it E-HRM helps to attain UNRWA goals and the development of its workforce. In other words, there is a solid positive relationship between the electronic components of human resource management and organisational development based on Atallah's (2016) and the current study's findings. The strong positive relationship between Relational e-HRM and HR Efficiency has similarly been affirmed by Relational e-HRM is delivered by Bondarouk, Ruel and van der Heijden (2009), and by Gardner, Lepak and Bartol (2003).

This paper shows that the relational outcomes positively relate to the use of e-HRM. Relational outcomes are those that deliver high value to the business. Relational outcomes frequently have a strong operational element to them linked closely to HR processes. In fact, they are frequently tied to the culture and style of the business. They focus on getting people into an organisation, develop them, reward them, manage their performance and, ultimately, arrange their exit from the business (Foster, 2008). Significantly, the results confirm a positive significant relationship between the relational outcome and the use of e-HRM in the context of Tanzania's private commercial banks. The relational functions like decreasing the response time of HR activities, ability to recruit in a cost effective manner are observed with a positive perspective when applying e-HRM. These findings are consistent with earlier studies already discussed under this section.

Transformational e-HRM and HR Efficiency

Third, this paper has examining the extent to which Transformational e-HRM influences HR Efficiency in Tanzania's private commercial banks. Ukandu *et al.* (2014) in their study proffered that e-HRM boosts efficiency in an organisation. The utilisation of the e-HRM system by HR managers brought about quicker turnaround time, efficiency, signifying an affirmative relationship between Transformational e-HRM and HR Efficiency.

Generally, researchers concur that, transformational outcomes accord HR managers and employees more flexibility in their approach (Ruel *et al.*, 2004; Ruta, 2005). Usually, the resultant increase in communication amongst the employees simultaneously enhances data accuracy. All these transformations linked to the application of e-HRM are positively related as the current has also affirmed. Empirical evidence shows that technology frees up HR from some of its routine tasks and leads to the development in the overall value of the organisation, and gives greater opportunity for HR professionals to become strategic partners (Brockbank, 1999; Ulrich, 1997; Wright, Dyer, & Takla, 1999). In fact, there has been a shift from an emphasis on HR administration to more strategic issues (Yeung, Brockbank, & Ulrich, 1994).

This study found a strong positive relationship between transformational e-HRM and HR Efficiency with the relationship being significant enough for Tanzania's private commercial banks. Yet, some empirical findings indicate that these goals are not really attained in practice.

Transformational outcomes were explained because of the increased availability of accurate and detailed information or of added time available to HR practitioners. E-HRM generally focuses on cost reduction and increase in efficiency in HR services rather than improve the strategic orientation of HRM (Ruel, Bondarouk, & Looise, 2004; Ruta, 2005; Gardner, Lepak, & Bartol, 2003). In the case of Lawler and Mohrman (2003), they did observe the HR department as a strategic partner in almost half of the companies with e-HRM. In fact there is still an on-going debate on the strategic benefits of e-HRM. Some researchers argue that e-HRM tenders strategic opportunities to HR professionals (Ruel *et al.*, 2004) whereas others counter with non-existence of strategic changes linked to e-HRM adoption in their argumentation (Haines & Lafleur, 2008). Some researchers caution that there are special conditions when e-HRM can add strategic value to organisations generally and for the HRM function particularly (Marler, 2009). In essence, accomplishment of transformational outcomes of e-HRM can materialise when there is a good basis for e-HRM to flourish at both the operational and relational levels (Ruel *et al.*, 2004). In this regard, the findings of this study specify that transformational e-HRM has a significant and positive bearing on HR Efficiency. These findings are consistent with earlier studies already discussed in this section.

Conclusion

As earlier empirical literature and the findings of the current study affirm, e-HRM has a positive influence on HR Efficiency. Thus, the transformation of HR from its traditional approach to e-HRM needs the introduction of technology to help enhance management activities and make them more efficient than under non-use of e-HRM. The introduction of e-HRM provides the possibility for HR professionals to realise more valuable function for an organisation. The influence of e-HRM is not only within the HR department, but also for all those who participate in the HRM activities. In traditional HRM, as the literature points out, the HR professionals focus huge energy on time-consuming and redundant daily administration processes, but pay less attention to the consultation work and strategy formulation which, otherwise, should be the main focus of the senior management in an organisation.

Thus, the e-HRM process is an optimisation, which does not only release the HR professionals from the numerous and diverse work, but completely changes their working style and working focus as well. In fact, with time HR professionals would become strategic partners of the organisation, and demonstrate their abilities in strategy formulation, work-flow management, and employee motivation towards the realisation of the HR function transformation. However, the extensive use of e-HRM requires managers and employees to acquire new skills and knowledge, to make use of the new systems and technologies. HR professionals partially turn their attention from personnel issues to relational e-HRM issues such as performance, including training on applying e-HRM and maintaining the e-HRM applications. Thus, e-HRM related functions constitute a new responsibility for the HR professionals. In fact, the widespread use of e-HRM can make HR professionals spend more time and energy on the strategic issue, thus accelerating the transformation of HR function (Gardner, Lepak, & Bartol, 2003).

The findings implicate that in practice, e-HRM has a significant effect on HR Efficiency and that employees would be more positive towards e-HRM use if they see its positive outcomes. Indeed, when an e-HRM application finds a perfect base for transformational activities, it gradually helps the HR department to assume the role of strategic partner. In this dynamic, communication from

central management and HR staff is necessary to support the use of e-HRM. The possibility of enhanced efficiency might propel interest in successful e-HRM use. Implicitly, e-HRM offers an opportunity for HR professionals and executives to shape how HRM is carried out in these private commercial banks to foster innovation, efficiency and effectiveness.

The findings also imply that, for an e-HRM to be used in the private commercial banks of Tanzania, a broader IT environment is a necessity. This IT environment here refers to the IT experiences of employees. If the e-HRM is perceived as easy to use, then the employees can be positive in applying e-HRM. The positive outcomes are the most desirable factors that can lead to the use of e-HRM in the private commercial banks in a transformative manner. Future studies can be done by utilising other technology factors such as ease-of-use.

Recommendations

This research developed an e-HRM framework for Tanzania's private commercial banks in particular and developing countries in general. Unlike the previous e-HRM literature that focused primarily on technical issues and uses only few specific areas of e-HRM framework (micro-level), this study contributes from an organisational perspective at macro level. The proposed e-HRM framework incorporates three areas of e-HRM for private commercial banks including operational e-HRM (payroll, attendance registers, employment terms and procedures, employee profiles, company policies), relational e-HRM (recruitment, selection, performance management, training), transformational e-HRM (knowledge management, strategic re-orientation, organization change process, strategic competence management).

This study also offers useful inferences on e-HRM that could inform decision-makers, ICT managers, ICT specialists, and its suppliers in the private sector by providing insights geared towards improving business decision-making, and escalating competitive advantage from effective e-HRM services. Moreover, it furnishes key stakeholders with a framework that could be applied in performing regular e-HRM tasks and in providing suitable solutions. Private organisations could refer to this framework as a useful reserve during their e-HRM projects in accordance with the assertions of the experts who validated it. The proposed framework for e-HRM would also ease difficulty associated with ineffective e-HRM practices in the private sector through understanding the important e-HRM dimensions highlighted in the proposed framework.

The following is a set of recommendations based on the results of the study, hoping for the development of e-HRM in private organisations of developing countries and to benefit from this field. These recommendations are: a) Providing financial support to the HR department by organisation's management for IT development in the process of shifting to e-HRM from paper-based HR, b) Training by management for employees on way of using e-HRM, c) Ensuring that help is provided by superiors for IT usage for employees that find difficulty in using e-HRM, d) Keeping abreast of the rapid changes in the field of e-HRM and the tools and means of ICT, e) Developing computerised management information systems to automate and cover all administrative aspects, f) Developing e-HRM, as they have a key role to play in success of the organisation, g) Adopting internal electronic correspondence instead of paper, which could contribute significantly to the reduction of administrative financial expenses, and expedite completion of work, h) Setting aside a budget by management for e-HRM.

Overall, this study has the potential of empowering Tanzania's private organisations in optimising the application e-HRM as it provides a comprehensive assessment methodology to guide self-assessments of agencies. Though this study's contributions are constructive, supplementary research is obligatory. For example, the proposed framework could be tested in other quantitative empirical researches examining other private organisations other than financial institutions as was the case in the current study. Conclusively, this study constitutes a vital conceptual step in discovering appropriate or significant localised features from a Tanzanian private organisational angle using an e-HRM lens.

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