

# Human resource development practices and procurement effectiveness: implications from public procurement professionals in Tanzania

Public  
procurement  
professionals  
in Tanzania

149

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## Abstract

**Purpose** – Human resource development (HRD) has been considered in enhancing organisational operations as human resources are vital for organisational performance. This study aims to examine the role of HRD on the effectiveness of public procurement in Tanzania.

**Design/methodology/approach** – This study employed a cross-sectional research design under which data was collected from 168 procurement professionals in Dodoma city, Tanzania. Structural equation modelling (SEM) was employed to analyse the collected data and examine the structural relationships between HRD and the effectiveness of public procurement in Tanzania.

**Findings** – The findings revealed that all the variables of human resource development; career development, training and performance appraisal, are statistically significant and positively related to the effectiveness of public procurement. Therefore, the findings reveal that career development, training and performance appraisal as HRD practices play an important role in enhancing the effectiveness of public procurement in the surveyed public procuring organisations in Tanzania.

**Research limitations/implications** – This current study divides HRD into three main practices: career development, training and performance appraisal. This limits the study's applicability to other HRD practices that organisations may institutionalize to public procurement professionals who work in various public organisations in Tanzania.

**Originality/value** – This paper integrates the concept of HRD and public procurement effectiveness. Therefore, the study adds value to the literature on human resource management and public procurement management.

**Keywords** Human resource development, Career development, Training, Performance appraisal, Public procurement, Effectiveness

**Paper type** Research paper

## Introduction

The public procurement function is a government function that involves the acquisition of goods, services and works to meet public needs. The function comprises a large portion of the

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Firstly, the researchers would like to express their gratitude for the valuable responses received from the procurement professionals who participated in this study. Additionally, the authors would like to state that their research project has resulted in the publication of the current manuscript, as well as another manuscript authored by the first author. The other manuscript, titled "Training and Performance of Public Procurement Professionals in Tanzania: The Mediating Role of Career Development," has been published in the Management and Economics Research Journal.



government's budget (Disdier *et al.*, 2021). For instance, in the Organisation for Economic Cooperation and Development (OECD) countries, public procurement expenditure has increased by nearly 1% of GDP from 2008 to 2019 (OECD, 2021). The percentages of annual budget expenditures are even higher in developing countries like Ethiopia (64% of the annual budget) and Morocco (17% of the GDP) (Dorasamy, 2021). In Tanzania, where it accounts for nearly more than 70% of the annual budget, public procurement accounts for the second-highest expenditure after personnel emoluments (Kajimbwa, 2018).

Thus, it is important for countries to ensure that the public procurement function is effectively managed so as to reach their development goals. The function is considered effective when the actions of individual procurement professionals lead to the achievement of the procurement objectives (Changalima *et al.*, 2021). Public procurement in Tanzania is struggling to meet effective outcomes due to reported shoddy work, dubious payments, payments for non-delivery, lack of competition, delays, user department complaints, fraud and corruption (Changalima and Ismail, 2019; Mrope, 2018; NAO, 2023; Public Procurement Regulatory Authority (PPRA), 2019). Following these events, the government focuses on amending public procurement laws and regulations to remove impediments to public procurement operations (Kihamba, 2021).

In the existing literature, procurement effectiveness has been linked to the competencies of staff involved in procurement operations (Kiage, 2013). This focus has produced a stream of studies on procurement professionalism and public procurement performance in Tanzania (Mrope, 2017; Mwasikili, 2020). Despite their valuable contribution, the current Controller and Auditor General (CAG) reports reveal that there are issues and malpractices which affect the procurement outcomes in the public sector in Tanzania (NAO, 2023). Professionalism is emphasised in the development of procurement professionals and the effectiveness of procurement. Professionalism entails learning necessary skills (Bals *et al.*, 2019; Changalima and Mdee, 2023). Therefore, organisations must ensure that their employees have superior skills which can be improved through human resource development (HRD) (Gopinath and Poornappriya, 2020).

The idea is consistent with human capital theory, which states that employee development improves an organisation's human capital (knowledge, skills and attributes), thereby increasing employee capabilities and overall productivity (Becker, 1964). In this regard, HRD practices such as career development, training and performance appraisal (Otoo and Mishra, 2018a, b) are required to meet the effectiveness of an organisation's operations. For example, career development has been deemed necessary for ensuring employee professional growth in order to improve operations and meet organisational goals (Niati *et al.*, 2021). Thus, the procurement workforce of the organisation can explain procurement effectiveness, which is linked to the acquisition of goods and services. However, empirical evidence on how these HRD practices affect procurement effectiveness in developing countries such as Tanzania is limited (Jaffu, 2023).

Given the importance of public procurement functions, it is critical to investigate public procurement effectiveness from a different perspective. This study investigates the relationship between procurement professionals' HRD practices and the effectiveness of public procurement. As a result, we intend to examine the role of HRD practices on the effectiveness of public procurement in Tanzania. Previous studies have addressed this question in some way, but gaps remain because previous studies are not context-specific. They concentrated on HRD and employee performance (Arubayi *et al.*, 2020; Otoo and Mishra, 2018a; Suwanto *et al.*, 2021), organisational performance (Akdere and Egan, 2020; Sholesi, 2021) and employee engagement (Fulmore *et al.*, 2023). The study makes two contributions in order to address the current research gap. For starters, the study contributes to the human resource and procurement literature. This contributes to the body of knowledge on HRD practices in Tanzanian public procurement. Second, the study provides critical

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insights for public procurement decision-makers and practitioners on how to implement HRD practices in improving procurement effectiveness in government organisations.

## Literature review and hypotheses development

### *Human capital theory*

The human capital theory asserts that human beings can expand their productive capacity with increased education and training. Therefore, the theory centres on the level of knowledge, skills and efforts that employees can possess for their productivity (Becker, 1962). The idea behind development of human resources relies on the fact that the successful implementation of organisational strategies and policies is dependent on the effective management of human resources (Acquah *et al.*, 2021; Saeed *et al.*, 2022). In this aspect, procurement professionals as employees within organisations possess important human capital which includes competencies, knowledge and skills for effective procurement operations. Therefore, the theory opines on including individuals' efforts and learning capabilities as valued resources to produce services and goods for organisations. The idea is to have human development programmes that organisations can use to improve organisational operations.

This theory is relevant to the current study as developing human resource capabilities may enhance the ability and efforts of procurement practitioners to ensure that the overall procurement objectives are achieved. Also, HRD is a key activity for organisations to ensure that their personnel have knowledge, skills, attributes and efforts that align with their job requirements and assigned tasks (Hernita *et al.*, 2021) and skill-enhancing practices are vital for human capital (Jiang *et al.*, 2012). Thus, employee development through training and education increases an organisation's human capital competencies, which enhances overall productivity (Becker, 1964). The theory introduces important issues regarding HRD within the organisation. HRD, which focuses on enhancing employees' capabilities, is an important tool for effective operations inside the organisation. The theory emphasises human development through learned skills from training and education. Therefore, organisations use HRD to develop employees' skills, knowledge and abilities so as to increase effectiveness (Teimouri *et al.*, 2018).

Furthermore, employees can gain various professional (technical) and interpersonal skills due to training (Pwovar-Sulej, 2021). Specifically, employee competency refers to the totality of the abilities and behaviours concerned with the performance of job tasks (Kolibáčová, 2014). As an outcome of career development, employee competency is attained through consultation and relationships with superiors, internal employee movements for cross-functional experience and formal education. In reality, competencies determine one's general capability to perform job tasks because, basically, at varying levels, all jobs require both technical (knowledge) and behavioural competencies (Armstrong and Taylor, 2014). In this regard, an employee with higher competency levels will be able to improve the organisation's performance by saving time, committing fewer errors and solving work-related problems relatively easily (Okumu *et al.*, 2018). This is in line with the theory, which assumes that career development is an investment in human resources that determines the long-term success of organisations (Wuttaphan, 2017).

In addition, performance appraisal has been regarded as one of HRD practices because it involves employee learning and increased work efforts. According to Wuttaphan (2017), both learning and work efforts are important aspects that lead to human capital. This is supported by a strand of literature that establishes that performance appraisal enables learning and motivates employees to their completed tasks (Mwambete, 2021). Since human capital is based on things obtained through the learning process, both performance appraisal feedback and close working relationships between employees and superiors

enhance learning. In this regard, performance appraisal feedback is a reason for increasing effort on the job. The focus of the current study is on the performance appraisal of procurement professionals and, hence, their primary job requirements centre on buying goods and services for their respective organisations (Steinfeld *et al.*, 2015). Thus, with the development of these professionals in terms of career development, training and performance appraisal, the given public organisations are more likely to achieve the desirable procurement effectiveness.

#### *HRD practices and procurement effectiveness*

HRD is a means of preparing employees to effectively undertake their current and future tasks (Richman *et al.*, 2015). It is used as a strategy for improving employee performance, hence organisational effectiveness through developing their knowledge, skills, competencies and attributes (Thuy and Trinh, 2020). In recent decades, there have been a series of studies on the relationship between HRD and employee performance as well as organisational effectiveness (Gopinath and Poornappriya, 2020; Hassan *et al.*, 2006). HRD concept comprises such practices as career development, training, performance appraisal, manpower planning and career planning. However, career development, training and performance appraisal are the most considered because they are necessary for enhancing employee competencies and improving organisational effectiveness (Otoo and Mishra, 2018a; Yuvaraj and Mulugeta, 2013). Thus, in this study, we relate these three aspects of HRD practices and procurement effectiveness.

Procurement professionals, like other employees in the organisation, are regarded as critical human resources for the organisation's operations in terms of improving the timely delivery of needed supplies of reasonable quality to meet the needs of the users. Therefore, procurement effectiveness in terms of ensuring that goods are delivered on time, at reasonable prices and of acceptable quality is heavily reliant on the capabilities of procurement practitioners within organisations (Changalima and Ismail, 2019). HRD practises are associated with enhancing the capabilities of employees involved in the organisation's operations. Thus, HRD practices can determine the procurement practitioners' ability to effectively perform in the procurement function. For this reason, and in light of the current state of Tanzania's public procurement function, the research focuses on three HRD practices (career development, training and performance appraisal).

#### *Career development and procurement effectiveness*

Career development is a lifelong process of enhancing human resources ability to meet current and future organisational needs (Pritchard, 2006). Career development activities include guidance and coaching (Armstrong and Taylor, 2014). With respect to developing employees' ability, the most important aspects of career development are integrating employees' needs with career opportunities and regular monitoring as they involve learning. Since it has elements of learning, career development is associated with an individual's growth and development in the context of his or her job (Saengchai *et al.*, 2020). It is considered to be a means for enriching human capital (skills, knowledge and abilities) as proposed by the human capital theory (Wuttaphan, 2017). Hence, career development enhances the development of both an organisation and its employees because it determines the quality and efforts that employees put on the job (Osibanjo *et al.*, 2014; Wuttaphan, 2017). On this, basis, previous studies have established that career development is linked with the improvement of job performance (Lee and Lee, 2018).

Therefore, like for other organisational functions, the effectiveness of the procurement function can be determined by career development practices for procurement practitioners. Among the job tasks of public procurement practitioners that need to be completed is

providing public goods and services (Steinfeld *et al.*, 2015). Thus, in order to be effective, the public procurement function is expected to deliver the required goods at the right time, required quality and reasonable cost (Goshie, 2020). Therefore, public procurement professionals are obliged to ensure that there is a constant supply of goods and services that are needed within their respective public procuring entities. Therefore, potentially, procurement effectiveness relies on the job roles conducted by procurement professionals whose abilities undergo on going upgrading through career development practices. Procuring entities should endlessly determine and develop the skills, knowledge and attributes that are needed by its procurement professionals so that they can effectively undertake their current and future roles.

The premise of the study relies on the idea that, through career development, procurement practitioners are more likely to enhance the ability to undertake their tasks and thus attain procurement effectiveness in terms of ensuring quality goods are available at the right time and reasonable costs. The study conducted by Mwaiseje and Changalima (2020) provides insights for public procuring entities to develop and implement career development to enable procurement professionals to execute public procurement functions. Based on this discussion, the following hypothesis is developed.

- H1. Career development of procurement professionals is positively associated with public procurement effectiveness.

#### *Training and procurement effectiveness*

Training is based on addressing current deficiencies in employee knowledge, skills and attributes. Hence, it is used as an intervention for improving employee ability in currently held jobs. Specifically, training is intended to improve employee performance by making them more capable of carrying out their job tasks, hence, it determines job efficiency and quality of output (Niati *et al.*, 2021). Moreover, it enables organisations to be flexible and proactive as it makes employees aware of the policies, rules and procedures that guide their jobs (Rodriguez and Walters, 2017). In the same line, human capital theory proposes that organisations that invest in the training of their employees will increase their employees' skill levels and become more effective (Sweetland, 1996). According to Kuruppu *et al.* (2021), with the rapid changes in methods of work, organisations can solve the performance problems of their employees by providing them with appropriate and timely training. In connection with that, the existing literature acknowledges that, training is a determinant of job performance and organisational effectiveness (Kuruppu *et al.*, 2021; Saranani, 2015).

So, procurement being an organisation function of providing the required public goods at the right time, quality and cost (Goshie, 2020; Steinfeld *et al.*, 2015); its effectiveness can be determined by training for procurement practitioners. Having procurement practitioners whose ability have been enhanced through training can ensure a constant supply of goods needed by public procuring entities. In this perspective, effectiveness in procurement function in terms of the supply of quality goods at the right time and reasonable costs can be influenced by the improvement of procurement practitioners' abilities through training. Therefore, in order to improve procurement effectiveness through the work of procurement practitioners, procuring entities are supposed to provide relevant training programmes to procurement practitioners.

This study is guided by the idea that, training can enhance the ability of procurement practitioners to undertake their tasks thus attain procurement effectiveness in terms of ensuring quality goods are available at the right time and reasonable costs. Even though the role of training of procurement practitioners has been emphasized in the existing studies (Mahuwi and Panga, 2020; Mwangike and Changalima, 2022), its role has been under-researched

in the context of Tanzanian public procurement. So, the study is based on the thinking that procurement professionals are more likely to make sure the organisation has a steady supply of goods and services when they are well-trained and have the right skills and knowledge about procurement. Therefore, training that improves the abilities of procurement professionals is necessary to improve the effectiveness of public procurement operations. Based on this, the study hypothesises that:

*H2.* Training of procurement professionals is positively associated with public procurement effectiveness.

### *Performance appraisal and procurement effectiveness*

Performance appraisal is the process of assigning value to employees' work performance with the aim of improving their future performance (Ikramullah *et al.*, 2016). It is concerned with determining how well an employee has done his job and taking corrective actions (Ugoani, 2020). So, it addresses both the past through assessing employee performance and the future by specifying the performance improvements to be done. According to Armstrong and Taylor (2014), performance appraisal involves regular intercourse between supervisors and subordinates from setting of job objectives, performance rating and performance feedback to subordinates. Thus, the aspects of performance appraisal process that determine employee performance, and hence organisational effectiveness are bringing the employees and the superiors closer and providing the employees with appraisal feedback for future improvement. Employee and superior proximity enable the superior to provide coaching, guidance and counselling to the subordinate, thereby enhancing the subordinate's ability to manage job-related challenges (Otoo *et al.*, 2019; Otoo and Mishra, 2018b). Also, appraisal feedback can improve employee performance by presenting information that may help the subordinates to redirect their efforts and specify performance adjustments so as to attain the pre-set goals (Kihama and Wainaina, 2019).

Therefore, performance appraisal among procurement practitioners can improve their ability to meet the desired level of procurement outcomes, hence attaining procurement effectiveness in the procuring entities. This is due to the fact that performance appraisal can assist procurement practitioners in improving their performance by learning alternative approaches to their duties through coaching, guidance and counselling provided by their superiors during the performance appraisal process. Similarly, procurement practitioners' performance can be improved by making appropriate performance adjustments based on performance feedback from their superiors. Enhancement of procurement practitioners' performance through performance appraisal can bring about procurement effectiveness because it enables procuring entities to meet the desired level of procurement deliverables (Changalima *et al.*, 2021; Goshie, 2020; Yussuf *et al.*, 2021). In the context of this study, a procuring entity that effectively engages itself in the performance appraisal process will be able to improve the effectiveness of procurement functions by enabling procurement practitioners to carry out their duties effectively. In this regard, we hypothesise the following.

*H3.* Performance appraisal of procurement professionals is positively associated with the public procurement effectiveness.

## **Methods**

### *Study area and research design*

The research was carried out in Dodoma, the capital city of the United Republic of Tanzania. The location was chosen specifically because of the increased number of public procuring organisations in the area following the relocation of the central government

offices from Dar es Salaam to Dodoma in 2017. Furthermore, most audited public procuring organisations in the Dodoma region are considered to have different levels of procurement operations. This study used a cross-sectional research design under, which data was collected once. This design was used because it involves the investigation of a specific phenomenon occurring at a specific time (Saunders *et al.*, 2019). In this regard, the study was concerned with obtaining a snapshot of the relationships between HRD practices and the effectiveness of public procurement in Tanzania. Cross-sectional studies are considered non-time consuming and reasonably inexpensive because data is only collected at a single point of time (Setia, 2016).

#### *Sampling and data collection*

This study employed a *a priori* sample size calculator for analysing SEM as recommended by Soper (2020) to obtain a desirable sample size for the study. Therefore, with the given number of latent variables (4), observed variables (15), the anticipated effect size (0.5), desired statistical power (0.8) and  $p = 0.05$ , a recommended minimum sample size was 116. The calculator recommends a minimum sample size for model structure and hence more than that is considered appropriate. In this regard, our sample of 168 fulfils the recommended minimum sample size for sampling adequacy. Therefore, the respondents to the study included 168 procurement professionals who work in various public organisations in the city of Dodoma, Tanzania. These respondents were all randomly chosen among those who participated in public procurement activities within their respective public procuring entities. The criteria for the selection of the study sample were based on the fact that the procurement professionals are registered with the procurement professional board of the country and have attained the professional level of qualification. The data collection activity took place between November 2021 and January 2022. Throughout the data collection period, 220 questionnaires were sent out, and the researchers successfully obtained 168 completed questionnaires, which were used in the study's final analysis. As a result, the study successfully obtained a 76.36% response rate from participants; this rate was considered adequate.

The study employed a survey tool for collecting data from respondents. To collect primary data from procurement professionals, a structured self-completion questionnaire was developed and administered. The design of the questionnaire was guided by aspects related to the main variables of the study, which include the HRD practices (career development, training and performance appraisals) and public procurement effectiveness adapted from previous studies (Goshie, 2020; Otoo *et al.*, 2019; Otoo and Mishra, 2018a; Singh, 2004; Sturges *et al.*, 2002).

#### *Measurements of study variables*

We used multiple items from existing empirical studies to measure the variables of the current study. These items are based on the constructs that have already been validated in previous studies (Appendix). The three independent variables (HRD practices) were measured into four items for each variable, whereby the items of career development were adapted from Otoo *et al.* (2019), Otoo and Mishra (2018a) and Sturges *et al.* (2002). Training was measured by considering items from Otoo *et al.* (2019), Otoo and Mishra (2018a) and Singh (2004), and performance appraisal utilized items from Otoo *et al.* (2019) and Otoo and Mishra (2018a). On the other hand, the dependent variable (effectiveness of procurement) was measured into three items adapted from Goshie (2020) and Janda and Seshadri (2001). When measuring procurement effectiveness, respondents were asked to rate the items on a questionnaire that pertained to the procurement outcomes associated with their professional efforts within organisations. This allowed them to provide feedback on various aspects of

procurement effectiveness (see PE1–PE3 in [Appendix](#)). All the items were slightly modified to fit the context of public procurement employees in Tanzania.

*Reliability and validity*

Before the actual data collection exercise, pre-testing of the questionnaire was conducted whereby two academics and two procurement professionals were contacted, and their inputs resulted in modifying the tool for clarity to suit the context and objective of the study. Literature shows that pre-testing questionnaires enhance the reliability of the research instrument ([Kazungu, 2020](#)). Furthermore, the internal consistency reliability was ensured using Cronbach’s alpha coefficients, as presented in [Table 1](#). For reliability to be ensured, a value of at least 0.7 and above is considered acceptable ([Cronbach, 1951](#); [Vaske et al., 2017](#)). The results presented in [Table 1](#) show that all values of Cronbach’s alpha coefficients are within the recommended range.

Also, construct reliability is achieved when the value is 0.7 and above. The presented results show that all values of construct reliability are within the recommended range. Furthermore, convergent validity is assessed by determining the average variance extracted (AVE) from each construct using the outer loadings of the indicators ([Ab Hamid et al., 2017](#); [Hair et al., 2010](#)). Results presented in [Table 1](#) show that all AVE values are within the recommended range ([Almén et al., 2018](#)). Finally, discriminant validity was tested using the Fornell–Larcker criterion, whereby the value of AVE is greater than the square of the intercorrelations as presented in [Table 2](#) ([Fornell and Larcker, 1981](#)). It was also determined that the AVE extracted from each construct was greater than the corresponding squared inter-construct correlation, and hence discriminant validity was achieved.

*Data analysis procedures*

The hypotheses were tested using an SEM because it is considered to be more robust and appropriate multivariate technique for analysing relationships among latent variables in multivariate structures ([Hair et al., 2010](#)). Therefore, the CFA was performed first before

Variables/Items	Factor loadings	AVE	Cronbach’s alpha	Construct reliability
<i>Career development</i>		0.555	0.831	0.832
CD1	0.780			
CD2	0.774			
CD3	0.735			
CD4	0.686			
<i>Training</i>		0.603	0.858	0.859
TR1	0.827			
TR2	0.771			
TR3	0.738			
TR4	0.768			
<i>Performance appraisal</i>		0.688	0.894	0.898
PA1	0.809			
PA2	0.901			
PA3	0.866			
PA4	0.732			
<i>Public procurement effectiveness</i>		0.687	0.850	0.866
PE1	0.862			
PE2	0.676			
PE3	0.928			

**Table 1.** Measurements, standardized factor loadings, AVE, Cronbach’s alpha and construct reliability

**Source(s):** Data analysis by authors



analysing the path analysis through the structural model to determine whether the measurement model fits the collected data well. Then, SEM was used to analyse the relationships between exogenous and endogenous variables measured through latent variables. Therefore, relationships between HRD practices (career development, training and performance appraisal) and public procurement effectiveness were established.

### Common method bias

During data collection, the study employed a self-reported survey under which information related to all variables of the study were obtained from a single person. This could result in common method bias and hence the testing of common bias, as recommended by Podsakoff *et al.* (2003) was employed. We employed Harman's single-factor analysis in which all items were loaded in factor analysis with a single-factor rotation. The results revealed that only about 36.81% of total variance was explained by a single factor, with the given threshold of at least 50% of variance should be explained by a single factor for common method bias to pose a problem (Podsakoff *et al.*, 2003). Thus, common method bias was not a significant problem in this study.

## Results

### Correlation results

The correlation results presented in Table 3 show that all variables of the study are significantly and positively correlated at  $p < 0.001$ . Specifically, results show that career development and training ( $r = 0.247$  and  $p < 0.001$ ), career development and performance appraisal ( $r = 0.261$  and  $p < 0.001$ ), career development and procurement effectiveness ( $r = 0.333$  and  $p < 0.001$ ). Also, training and performance appraisal ( $r = 0.385$  and  $p < 0.001$ ), training and procurement effectiveness ( $r = 0.322$  and  $p < 0.001$ ) and performance appraisal and procurement effectiveness ( $r = 0.478$  and  $p < 0.001$ ). With given this range of coefficient correlations, the only correlation result with a medium strength is between performance

	CR	AVE	MSV	CD	TR	PA	PE
CD	0.832	0.555	0.120	<i>0.745</i>			
TR	0.859	0.603	0.170	0.288	<i>0.777</i>		
PA	0.898	0.688	0.247	0.300	0.412	<i>0.829</i>	
PE	0.866	0.687	0.247	0.346	0.390	0.523	<i>0.829</i>

**Note(s):** Italicized values represent the square root of AVE

**Source(s):** Data analysis by authors

**Table 2.**  
Fornell-Larcker  
criterion for  
discriminant validity

Variables	Career development	Training	Performance appraisal	Procurement effectiveness
Career development	1			
Training	0.247**	1		
Performance appraisal	0.261**	0.385**	1	
Procurement effectiveness	0.333**	0.322**	0.478**	1

**Note(s):** \*\*. Correlation is significant at  $p < 0.01$

**Source(s):** Data analysis by authors

**Table 3.**  
Correlation results

appraisal and procurement effectiveness, all remaining coefficients present a small strength. This is because Cohen (1988), as cited by Pallant (2020), suggested the following guidelines the value of  $r = 0.10$  to  $0.29$ , then the strength of the correlation is small,  $r = 0.30$  to  $0.49$  indicates a medium-strength, and  $r = 0.50$  to  $1.0$  indicates a large strength of correlation coefficient.

*Confirmatory factor analysis results*

The first-order CFA was conducted to confirm the study’s variables in the context of the study area, and the results are presented in Figure 1. As shown in Figure 1, the factor loadings are all greater than 0.5, which indicates that the items explain well the latent constructs of the study (Truong and McColl, 2011). All values of the measurement model fit indices as presented in Table 4 are within the recommended (Hu and Bentler, 1999). The values of correlations between variables in the model suggest that multicollinearity was not a concern in this study (Jalali et al., 2014). Furthermore, to test the assumption that the correlations among a set of first-order factors are accounted for one or more higher order factors, the second-order CFA was conducted (Brown, 2006). The values of  $\chi^2$  and  $df$  for the second-order factor model that is presented in Figure 2 are 129.966 and 86, respectively. So, the chi-square difference test and the degree of freedom difference were computed between the first and the second-order CFA and the result was not significant at  $p < 0.05$ . Therefore, there are no statistical differences between the first- and second-order CFA.

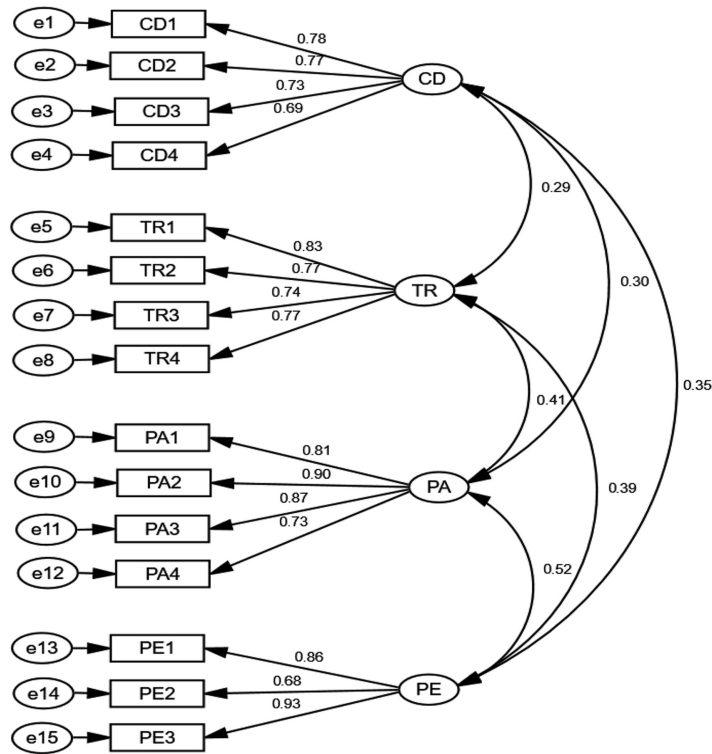


Figure 1.  
CFA for study’s  
constructs (1st order)

Source(s): Figure by authors

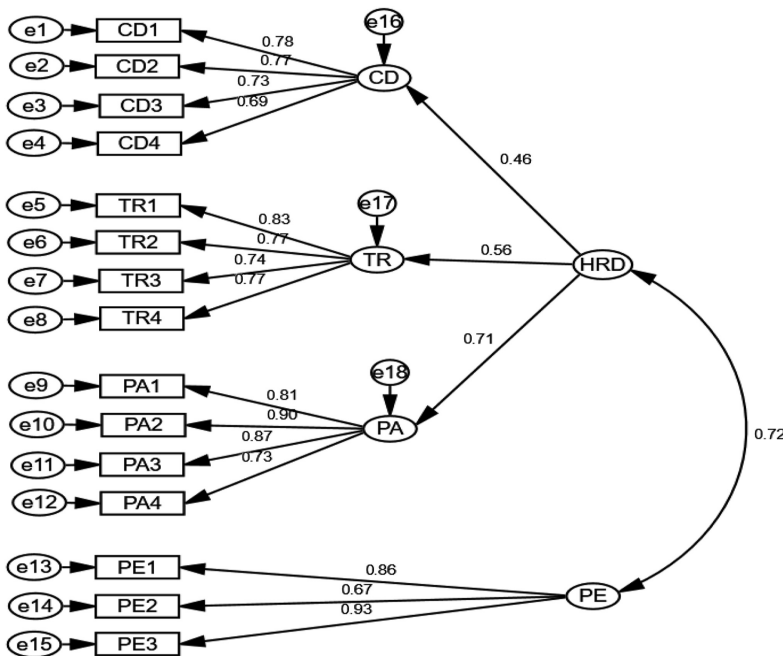
*Structural model and hypotheses testing*

The structural model was examined in order to test the hypothesized relationships (results are presented in Figure 3). The structural model fit indices present the value of  $X^2 = 1.540$ , CFI = 0.966, NFI = 0.910, IFI = 0.966, TLI = 0.957, SRMR = 0.057 and RMSEA = 0.057. All these values are falling within the acceptable range (Hooper *et al.*, 2008; Hu and Bentler, 1999). Furthermore, the results on the structural relationships are in support of all hypotheses of the study as presented in Table 5. The findings show that the first hypothesis, H1 which states that the career development of procurement professionals is positively associated with public procurement effectiveness is supported with  $\beta = 0.177$  and  $p = 0.034$ . Thus, career development, in particular, contributes significantly to approximately 17.7% of procurement effectiveness ( $\beta = 0.177, p = 0.034$ ). This implies that, the improvement of career development

Measure	Estimate	Threshold
$X^2$	129.351	-
Df	84	-
$X^2/df$	1.540	Between 1 and 3
CFI	0.966	>0.95
SRMR	0.057	<0.08
RMSEA	0.057	<0.06
PClose	0.269	>0.05

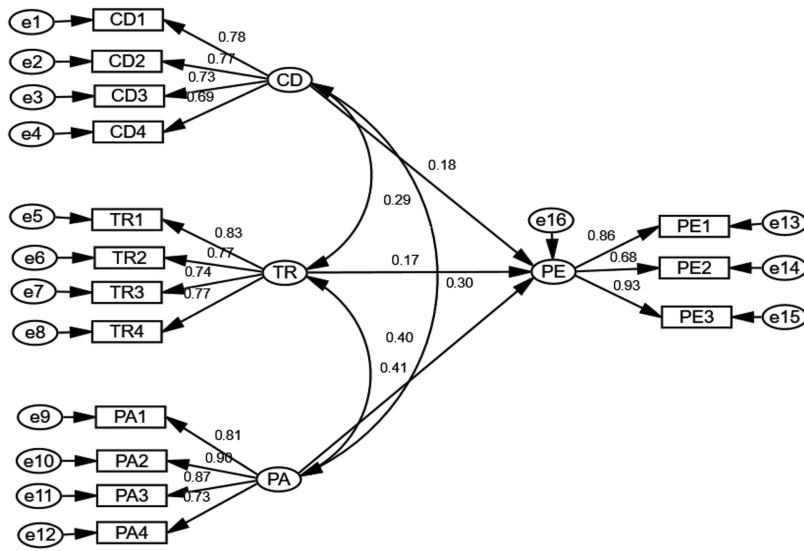
**Table 4.** Measurement model fit indices

Source(s): Data analysis by authors



Source(s): Figure by authors

**Figure 2.** Second-order CFA



**Figure 3.**  
Path model for  
relationship testing

Source(s): Figure by authors

**Table 5.**  
Relationships as  
presented in the  
structural model

Variables	Standardized estimate	Unstandardized estimate	S.E.	C.R.	p
PE ← CD	0.177	0.232	0.110	2.116	0.034
PE ← TR	0.175	0.229	0.113	2.030	0.042
PE ← PA	0.398	0.456	0.103	4.423	***

Note(s): \*\*\* $p < 0.001$

Source: Data analysis by authors

for public procurement professionals determines the effectiveness of procurement in terms of ensuring goods are available at the right time, quality and reasonable cost.

Also, the findings on the second hypothesis H2 show that training and procurement effectiveness are significant and positive related ( $\beta = 0.175$  and  $p = 0.042$ ). Therefore, training and procurement effectiveness have a positive and significant relationship ( $\beta = 0.175$ ,  $p = 0.042$ ). The study shows that training practices for public procurement professionals explain the effectiveness of public procurement by 17.59%. Finally, the results reveal that performance appraisal has a positive influence on procurement effectiveness ( $\beta = 0.398$  and  $p < 0.001$ ) and thus, a third hypothesis H3 is accepted. The results imply that performance appraisal practices among public procurement professionals determine the effectiveness of public procurement by about 39.8%.

### Discussion

The objective of this study was to analyse the role of HRD practices on the effectiveness of procurement in the public sector. The findings provided support for hypotheses H1, H2 and H3, which indicated that HRD practices such as career development, training and performance appraisal have positive and significant effects on public procurement

effectiveness. These results align with the human capital theory, demonstrating that investment in HRD can have a significant influence on procurement outcomes. Furthermore, the study revealed that career development has a particularly strong influence on procurement effectiveness. The findings correspond to the arguments by [Nami Nasution et al. \(2018\)](#) and [Gilley et al. \(2011\)](#), in which career development practices are key for improving employee performance by enhancing their competencies to undertake current and future job demands. Though this literature is from other contexts, it supports the context of public procurement in Tanzania used in this study. Therefore, career development practices are important in improving knowledge, skills and abilities of public procurement professionals as individual employees in the organisation which in turn can enhance the effectiveness of public procurement.

While there is extensive documentation on the influence of training on both organizational and employee performance ([Amoah-Mensah and Darkwa, 2016](#); [Arinaitwe et al., 2021](#); [Kuruppu et al., 2021](#); [Otoo and Mishra, 2018a](#)), this study emerged from the question regarding the influence of employee training practices, specifically for public procurement professionals, on the effectiveness of the public procurement functions. Therefore, the findings support the argument that public organisations can improve procurement effectiveness in delivering goods and services at the right time, quality and at reasonable costs by enhancing training practices among public procurement professionals. This perspective supports the human capital theory founded on the idea that employees' abilities are a resource an organisation can use to improve its productivity ([Becker, 1962](#)). This assertion corresponds with the findings by [Tassabehji and Moorhouse \(2008\)](#) and [Martin et al. \(2014\)](#), which provides an employee with knowledge, skills and job-related attributes which enhance their performance and effectiveness on their jobs.

Lastly, the study establishes positive and significant relationship between performance appraisal and public procurement effectiveness. This means that organisations' attempt to evaluate the level of performance of their public procurement professionals and provide them with performance feedback strongly explains the effectiveness of public procurement in terms of enhancing the availability of needed goods at reasonable prices and desired quality. This is the case because performance appraisal feedback energises employees to increase their efforts against set performance expectations ([Islami et al., 2018](#)). There is a vast literature on the influence of employee performance appraisal on the performance of individual employees and organizations in general ([Iqbal et al., 2013](#); [Kihama and Wainaina, 2019](#); [Ugoani, 2020](#)). However, this study attempted to address the link between performance appraisal practices for public procurement professionals and the effectiveness of public procurement.

### *Theoretical implications*

This study adds to the ongoing discourse regarding the influence of HRD practices on organisational performance ([Otoo et al., 2019](#); [Sholesi, 2021](#)), as well as employee performance ([Arinaitwe et al., 2021](#); [Arubayi et al., 2020](#); [Otoo and Mishra, 2018a](#)). This study adds to the literature on the role of HRD in the effectiveness of procurement practices in the public sector in Tanzania. In addition to that, our findings support the human capital theory as the study's results suggest that performance appraisal, career development practices and training as HRD practices determine the effectiveness of public procurement functions. The theory emphasises that human beings may boost their productive potential by acquiring education and training opportunities ([Becker, 1964](#); [Sweetland, 1996](#)). Therefore, procurement professionals in the public sector can enhance the effectiveness of procurement activities by improving productivity via skills obtained from training and development programmes. As opined by [Nafukho et al. \(2004\)](#), education is seen as a strategic investment that prepares

the workforce to increase individuals' and organisations' productivity which supports the growth and development of organisations.

### *Managerial implications*

The study's results suggest that individually, procurement professionals should prioritize career advancement to achieve the highest level of expertise in their field. However, to improve career development programmes and benefit individual employees within public organizations, the support of top management is crucial. The management support may create a means to facilitate proper planning for career development among public procurement professionals. Lee *et al.* (2018) opined that top management support is necessary to enhance HRD efforts. In this aspect, management should ensure that appropriate training programmes are in place, and encourage participation by procurement professionals in workshops, short and long-term training and other activities that will improve their capabilities and productivity.

The procurement profession board of Tanzania should ensure that an adequate number of qualified professionals characterises the procurement professional cadre. To date, the board has conducted various professional exams at different professional levels. Procurement professionals are scrutinised through these professional levels to enhance their career goals. Based on the findings of our study, managers are supposed to ensure that career development is enhanced to ensure that procurement staff members in their respective organisations are involved in developing their careers to enhance the effectiveness of procurement functions. This can be done by having clear and well-known schedules for ensuring employed procurement professionals are involved in career development activities such as participation in professional organisations through attending annual conferences and professional activities in line with the Chartered Institute of Procurement and Supply (CIPS) and Tanzanian profession board and improving duties and responsibilities.

According to the findings of this study, procurement professionals, like any other employees, when executing their duties, should ensure that the goods and services they procure are of the agreed-upon quality and delivery time. Therefore, procurement professionals are encouraged to participate in professional development programs, training sessions and workshops, which align with the efforts required to ensure that employees are developed to improve the organisation's performance. It is also recommended that managers who supervise procurement professionals, particularly heads of procurement departments, should ensure that appropriate performance appraisal metrics are in place and that these metrics are used during annual performance reviews. Thus, performance reviews should include relevant professional duties that can be evaluated to improve the human development programmes for procurement professionals to increase the effectiveness of procurement.

### **Conclusions**

There has been a strand of empirical studies on HRD practices in different contexts in recent years. However, these existing studies are centred on organisational performance and employee performance, which resulted in scant evidence of HRD practices on the effectiveness of procurement operations. Therefore, our study focused on the influence of HRD practices on the effectiveness of procurement. Based on the results, we conclude that HRD practices in terms of career development, training and performance appraisal are important determinants of the effectiveness of procurement operations in the public sector as perceived by public procurement professionals in Tanzania.

HRD practices are utilised by organisational employees, including procurement professionals in the public sector. Like other employees in the organisation, procurement professionals need career development, training and performance appraisal as important HRD practices. These conclusions of our study are concurrent with other previous studies in different contexts. Therefore, this current study establishes a contextual relationship model of HRD practices in Tanzania's public procurement context. Through career development, training and performance appraisals, procurement professionals can ensure effective procurement practices within their respective public organisations.

### Limitations and areas for future research

Though the study accomplished the overall objective, it has some limitations that open doors for future research. This study examines the role of HRD practices on public procurement effectiveness in Tanzania. There are limitations to the study regarding HRD practices. The study divides HRD into three main practices: career development, training and performance appraisal, which seem relevant to public procurement professionals. Other studies can be carried out by considering practices other than those that we considered in the current research.

Another limitation of the current study relies on the fact that we collected only cross-sectional data from public procurement professionals and used quantitative data analysis procedures for analysing the relationship between study variables. Given the fact that most cross-sectional studies are regarded as merely a glimpse of a situation, and circumstances may change if a different timeframe is chosen, this study recommends that future researchers consider longitudinal research. Also, qualitative opinions may be significant to supplement the information obtained in the current study, as qualitative research provides more comprehensive descriptions of opinions provided by respondents.

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**Appendix**

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**Variables and statements**

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*Career development* (Otoo *et al.*, 2019; Otoo and Mishra, 2018a; Sturges *et al.*, 2002)

- My organization provides coaching to enhance my career (CD1)
- My organization supports my individual development strategy (CD2)
- My organization provides unprejudiced career guidance whenever required (CD3)
- I have been introduced to people at work who are prepared to help me develop my career (CD4)

*Training* (Otoo *et al.*, 2019; Otoo and Mishra, 2018a; Singh, 2004)

- Adequate and relevant knowledge and skills are acquired through training programs (TR1)
- The knowledge and skills associated aids used in the training programs are available for use (TR2)
- The activities of the training programs meet my needs (TR3)
- I am sponsored to training programs on the basis of relevant training needs (TR4)

*Performance appraisal* (Otoo *et al.*, 2019; Otoo and Mishra, 2018a)

- The appraisal system in my organization is growth and developmental oriented (PA1)
- My organization provides a written and operational performance appraisal system (PA2)
- Performance is assessed on established objective and measurable outcomes (PA3)
- Performance review discussions conducted with the highest quality and care (PA4)

*Public procurement effectiveness* (Goshie, 2020; Janda and Seshadri, 2001)

- The goods delivered to my organization are as per the agreed time (PE1)
- Fair, reasonable, competitive and affordable prices are used in my organization's procurement process (PE2)
- The agreed quality is always delivered on time (PE3)

**Source(s):** Created by authors

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**Table A1.**  
Measurement scales  
used in this study

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