

## **Impact of Human Resource Planning on Construction Project Completion in Zanzibar**

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### ***Abstract***

*The study examined the impact of Human Resource Planning on construction project completion in Zanzibar. The quantitative research approach and descriptive research design used in this study. We collected data from a sample of 180 by using the simple random probability technique that was conducted at Zanzibar. The data collected through the questionnaires and SPSS used for data imputation the descriptive statistics that computed to describe the data collected with inferential statistics at 95% confidence level were used. The findings show that HRP in performance management influenced function on the increased effectiveness and accountability in the project management. The findings also revealed that the HRP in performance management was a significant and positively correlated with construction project completion. The study concluded that performance management influenced to development of managerial leadership and coaching skills in construction project implementation. This study recommended that the construction organization and its clients must understand the awareness and flexibility of employees dynamically and competent retention strategies for knowledge transferred.*

**Keywords:** *Human Resource Planning, Construction Project Completion*

### **INTRODUCTION**

Most of the construction companies in worldwide face a lot of restrictions on human resources such as “workmanship defects”, delay and cost overrun issues in their project’s completion. Human resource planning for construction is managing ways in human resource with regarding the growing of the construction company for facilitating the various task in achieving its goals. (Muntu *et al*, 2021). Globally, a project is said to be successful on timely completion of the construction according to the targets (Ashiru and Ashiru, 2019).

HRP improve organizational efficiency, engagement of employees and work quality for the considering such tasks HR preparation, growth compensation management, human resources management, employee training, strategic recruiting, efficiency, health care, employee satisfaction, worker relations as well as provision of employee services (Khan & Abdullah, 2019).

Apart from the HRP increase the performance management due to the presence of the national and foreign markets that lead the organizations in hiring and retaining highly talented workers. Most companies are dependent on their HR team that hold to become the competitive market (Collins, 2021). Therefore, HRP is strongly related to the efficiency of the construction project. In addition to that, HRP and employee retention and engagement in construction projects has been increasingly recognized as crucial. Strategic HRP ensures that staffing needs are met, skills are aligned, and employee engagement is fostered, all of which contribute to higher retention rates and successful project outcomes.

Effective HRP involves forecasting future workforce needs, skill requirements, and potential gaps. In the construction industry, where projects are often temporary and require specialized skills, strategic HRP is crucial for retaining talent. By aligning HRP with project demands, companies can ensure that they have the right people in place, reducing turnover and improving job satisfaction. But, the most and basic constraints to meet the project goals is the construction delay due to lack in expert in the project teams, stakeholders and the contractors (Gashaahun, 2020).

Moreover, there are financial problems or difficulties, unwillingness or inability to sustain operations over long periods of non-payment, inadequate site management, political interference, adequate access to finance and delayed payments for completed work and an unrealistic program of works (Works Schedule) that lead delays in construction projects in Tanzania (Kullaya et al, 2022). Construction projects often involve varying team sizes and skills over time. Effective HRP helps to manage these fluctuations by anticipating staffing needs and mitigating potential disruptions. This proactive approach supports employee retention by minimizing periods of uncertainty and ensuring consistent work opportunities.

The most of construction projects (both public and private projects) face delay in completion which hinders the project performance and resulting into disputes or sometimes contract termination (Zanzibar Housing Corporation, 2022). According to Heever, (2021), the construction delaying cause from different parties in the construction project such part as contractors, clients and external parties. For contractors some of causes as capital difficulties, lack of equipment, work-site or productivities, technologies and professional, project planning, supervision and site managements. The clients have some following causes as of the drawing, overall structures, various orders, financial constraints, slow decision making and deficient in coordination. And lastly, the external factors such as laws and regulation, government permit, shortage of construction materials, weathers and price fluctuations.

Additionally, this is also the factor that is affecting the Zanzibar economy in wastage of resources and projects cost increased. The Revolutionary Government of Zanzibar (RGoZ) got challenges to meet target such as project of Electronic M&E System that cost TZS 27,801,144 not operate due to failure of conducting feasibility and HR (user requirements of the business process). Moreover, it is also reported that there is a lack of HRP and skills in M&E that cause TZS 7,955,397 fail to complete the Ward development project (CAG, 2022) that affect the Zanzibareconomy in wastage of resources and projects cost increased that challenges to meet target.

## **LITERATURE REVIEW**

The theory used in this study is agency theory that includes the principal and agent to reach the project target. Jensen and Mackling developed the Agency theory in 1976 define an agency relationship as “a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent”. The theory assumes that both the principal and the agent are utility maximizer with different interests and that because of information asymmetry.

Nwajei et al, (2022) reported that agency theory has been used most of time to model project relationships and contracting situations where an owner assigns a contractor and/or a consultant to deliver the project on its behalf that the principal is always described as tasked with monitoring the actions of the agent (checking).

It is significant in managing projects and indeed emphasizes on the need of taking the interest of the stakeholder. The construction company requires to have competence team with considering HRP aspect to reach the project target for better keeping relation to their client. Agency theory is applicable to the study in ensuring that resources such as time, finance, human and materials are utilized at the best.

While, the empirical reviews show the different ways of analyzing methods, assess findings, evaluate quality and draw conclusions. Ashiru and Ashiru (2019) conducted research of the sustainability of human resource planning for construction projects using quantitative approach in Nigeria. The aim is to examine the sustainability of HRP for construction projects to justify the aforesaid statement. The authors used the descriptive and inference statistical analysis. The structured questionnaire used to select participants of top management who hold office and making decision to the organization. The results found that HRP improved to minimize the delaying, repeated errors and build team which provided the strong decision which provide a lot of change during the project implementation.

Raghuwanshi (2023) explored the impact of work-life balance on employee retention and organizational performance in Delhi. With aims is to investigate the association between work-life balance policies and employee retention and how they enhance organizational performance in the Is in Delhi. It has been determined in-depth and this determination, the explored literature, and past studies have evidenced that the work-life balance has a significant influence on employee performance as well as on employee retention. This study used the primary quantitative, an 80-sample size contributed the perception with the context of the organizational performance. It has been noted that work-life balance is significantly related to employee retention and organizational performance. He concluded that the employees are being promoted via offering balanced work life.

Pariikh&Phugat (2019) conducted the research in assessing the performance management in road construction project in India. The researcher used the interesting trend in the business among global organizations in the technology and consulting space. The results found that there was increased in encouraged the Indian counterparts to critically evaluate the current performance processes and make modifications and to accomplish complex tasks by multidisciplinary teams in the construction

industry. The researchers concluded that the success of a project depends upon how well the personnel can work effectively to accomplish the objectives within scope, cost and quality constraints. Performance management is about directing and supporting employees to work as effectively and efficiently as possible in line with the needs of the organization.

## **RESEARCH METHODOLOGY**

The study applied post-positivism research philosophy that holds an objective that reality exists in the research process independently. It can help to measure, control, predict and test in systematic from the various observation or variable. With this philosophy, the researcher showed the reality from quantitative information or data that gave or provided by the respondents.

The descriptive research design was applied to conduct the study. The target population was 328 staffs were considered with sample size of 180 that was conducted at Zanzibar. The research was conducted in Zanzibar in public offices deal with the construction services and private offices including consultants and contractors to get more information on research topic.

The Simple Random probability technique used in this study of research. The variables investigated using questionnaire to determine the influence of the independent variables on the dependent variable. A questionnaire was preferred by respondents due to anonymity. The data analysis guided by the objectives of the research and their measurement. Statistical Package for Social Sciences (SPSS) version 20.0 used as the tool of analysis in production of tables, descriptive statistics and inferential statistics. It meets the underlying assumptions the regression model in testing the variables.

The correlation between the independent and dependent variable and the significant P- values and inferential analysis used to make judgments. The Correlation coefficients provided the degree and direction of relationships for measuring the relationship or co-variation of two or more dependent variables. The statistical calculation of such correlation done and expressed in terms of correlation coefficients. A multiple regression model utilized to show the connection between the dependent and independent variables. The multiple regression model of the form;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where: Y= Construction Project Completion  $\beta_0$ = Constant  $\beta_1$  to  $\beta_3$  =Coefficients X1= HR training X2= staff anticipated changes X3 = workforce requirements  $\varepsilon$  =Error term. Inferential statistics will be conducted to determine the relationship nature between variables. Data was interpreted with the help of significance P-values; if the P-value is less than 0.05, the variables deemed to be significant to give an explanation on the changes in the dependent variable.

This study described and examined the relationships within the collected data by a multiple regression analysis. All parametric test assumed some certain characteristics about data, also known as assumptions. Violation of these assumption may change the accuracy of the regression estimates and interpretation of the result. The linearity, normality, homoscedasticity, collinearity, and autocorrelations considered in statistical analysis.

The study used the test covers all relevant aspects of the subject matter to ensure the validity on a test or instrument measures what it is intended to measure. The consistency and stability of a measurement over time and across different conditions at different times for the reliability results. Ethical considerations involve the moral principles guiding research and practice to ensure respect, fairness, and integrity.

### Measurement of Research Variables

The independent variable was HRP while the dependent variable was construction project completion. Table 4.1 presents how the variables operationalized and measured.

**Table 4.1:** Operationalization of Variable

Variable	Type	Operationalization	Indicator
Construction Project Completion	Dependent variable	Utilization of Services or products	<ul style="list-style-type: none"> <li>• Product and Services Satisfaction</li> <li>• Construction Cost</li> </ul>
HR Training Programs	Independent variable	Type of HR Training Programs	<ul style="list-style-type: none"> <li>• HR Training Budget</li> <li>• Presence Project Monitoring</li> </ul>
Performance Management	Independent variable	Level of Human Resource Utilization	<ul style="list-style-type: none"> <li>• Presence of HR Evaluation Process</li> <li>• Awareness for Improvement</li> </ul>
Employee Retention and Engagement	Independent variable	Level of the Competency	<ul style="list-style-type: none"> <li>• Conducive Working Environment</li> <li>• Fulfilment of the Project's Mission</li> </ul>

Source: Researcher, (2023)

## **RESULTS AND DISCUSSION**

### **HRP in Operation Management with its Implementation**

This study wanted to measure from the respondents the understanding of HRP on operational management with its implementation in construction project. The results found out that most of the respondents had understanding on operational management with its implementation in construction project. According to Ngo et al, (2019) there was lack of awareness on the operational, affordability design and techniques provided and became the major challenge for the building construction. Additionally, the skill and knowledge needed in designed construction project for providing more and innovation construction project.

In addition to that, there were regular operational evaluations on the construction project that increase the client target which led HRP performance facilitation. According to the Ngo et al, (2019) among the major factor to be considered in construction project was the operational controlling process. It required to have regular evaluation with planning, schedule and cost of the project understandable. The regular operational evaluations were average, high and major factor on the construction (Hamza et al, 2019).

On other side, the construction project evaluation systems had face various obstacles like partial implementation and not fully most of time, insufficient information to stimulate renovation and delivering low quality (Guerriero et al, 2019). Therefore, the construction project evaluation systems required to play an active role in monitoring for higher improvements to be made on promoting construction sustainability.

However, it requires to increasing the awareness of the area of improvement for better HRP performance management in construction. Kassem et al. (2019) reported that there were huge amounts of money spending on public and private infrastructure that required potential awareness for improvement in construction project resulting in efficiency and productivity on the delivery of construction projects becoming strategic priorities in any countries. However, the poor and less improvement in construction project caused major factors of failure in construction.

In addition, most of the countries had project gap faced by improving the performance of the construction industries that had lack in innovation of the project, particularly in its adoption of digital technology. Thus, there

were needs and increasing the awareness of the area of improvement in construction for the transformational process and learn how to adapt with a stronger drive (Woodhead et al. 2018).

### **Management Functions**

According to Anwar et al, (2021) the public institutions often try to progress their performance by renewing products and procedures, minimizing expenses and improving quality. The table 5.1 found that 43 (23.9 percent) of the respondents said the effect of the performance management function increased effectiveness and accountability in the project management (IEAPMGT). In addition, the management accountabilities were among the sources of the recruitment the skilled workers, measured to enhance safety and reduce other construction project risks (Albert et al, 2021).

Additionally, the Table 5.1 portrayed that 37(20.3 percent) of the respondents said the effect of the management functions helped employee to align their achievements with organization objectives (HEA00). Apart from that, 36 (20 percent) of the respondents said the effect of the management functions could boost productivity through improve performance (BPTIP). While Albert et al, (2021) reported that construction projects had adverse effects included significant delays on projects, reduction in productivity rates, material price escalations and inability to secure materials on time.

Also, in the table 5.1 reported that the effect of the management functions developed reward mechanism that improve accomplishment the construction project tasks (DRMIA) according to 31(17.2 percent) of the respondents their responded. 19(10.6 percent) of the respondents mentioned that the effect of the management functions caused to have proper working condition in the stability of the organization (PWCSO). Lastly, the effect of the management functions led to develop managerial leadership and coaching skills in construction project implementation (DMGTLCS) according to 14(7.8 percent) of the respondents mentioned.

The implementation of the construction project improved the communication and management skills among the among business partners at any construction stages and the overall reduction in the cycle time as well as the life cycle cost of a project (Chan, 2019). Apart from that Mosallaeipour et al. (2018) reported that it highly required the human



intervention and coaching in working places to the construction project implementation to enable the project flexibility and meeting the current customer satisfactions.

**Table 1:** Performance Management Functions

Description	Frequency	Percent
DRMIA	31	17.2
IEAPMGT	43	23.9
BPTIP	36	20
DMGTLCS	14	7.8
HEAAOO	37	20.6
PWCSO	19	10.6
<b>Total</b>	<b>180</b>	<b>100</b>

Source: Field Survey, (2023)

### Descriptive Statistics on the Performance Management

From the table 5.2 showed that performance management had means 1.36 and its standard deviation had 0.48 according to 180 of the respondents. The results also showed that performance evaluation had means 1.38 and its standard deviation had 0.48 according to 180 of the respondents. The awareness of the area of improvement got the means 1.31 and its standard deviation had 0.46 according to 180 of the respondents. Lastly, the table 4.17 showed the results of performance management function had means 3.22 and its standard deviation had 1.66 according to 180 of the respondents. Thus, the performance management, the performance evaluations, the awareness of the area of improvement and the performance management function that, there were strongly agreed on the performance management.

**Table 2:** Performance Management

Description	N	Mean	Std. Deviation
Performance Management	180	1.36	0.95
Performance Evaluations	180	1.38	0.98
Awareness of the Area of Improvement	180	1.31	0.92
Performance Management Function	180	3.22	2.66

Source: Field Survey, (2023)

### Inferential Analysis

This study also tested, investigated with also measure and describe the strength and direction of a relationship between two quantitative, the correlation being more about association and regression about prediction

and understanding relationships. The continuous variables and Pearson's correlation coefficient ( $r$ ) is a measure of the association strength between the two variables. The tests of the possibility of multicollinearity that allows determining the overall fit of the model and the relative contribution of each of the predictors to the total variance explained, presents the model summary, analysis of variance and the coefficients of the independent variables.

### ***Correlation Analysis Results of Dependent and Independent Variables***

The results of Table 5.3 revealed the result of Pearson's Correlation Coefficient between variables. It was found that the construction project completion (CPC) has significant correlation ( $r=0.151^*$ ,  $p$  value < 0.05) with the performance management (PMGT). Also, it was found that the PMGT has significant correlation ( $r=0.235^{**}$ ,  $p$  value < 0.05) with the HR training (HRT). And finally, it was found that the employee retention and engagement (ERE) have insignificant correlation ( $r=0.2^{**}$ ,  $p$  value > 0.05) with the HR training (HRT). This indicated that the employee retention and engagement had direct effect on the construction project completion timely.

**Table 3:** Correlation Analysis Results

Variables		CPC	PMGT	HRT	ERE
<b>CPC</b>	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	180			
<b>PMGT</b>	Pearson Correlation	.151*	1		
	Sig. (2-tailed)	0.04			
	N	180	180		
<b>HRT</b>	Pearson Correlation	0.11	.235**	1	
	Sig. (2-tailed)	0.13	0.00		
	N	180	180	180	
<b>ERE</b>	Pearson Correlation	0.05	-0.14	0.02	1
	Sig. (2-tailed)	0.50	0.07	0.80	
	N	180	180	180	180

\*\* . Correlation is significant at the 0.01 level (2-tailed)

**Source:** Field Survey, (2023)

### ***Testing Multicollinearity***

This study used the multiple regression models to predict the value of a specified dependent variable based on the values of two or more independent variables whether exist or have a high correlation with each other. It can also happen if an independent variable is computed from other

variables in the data set or if two independent variables provide similar and repetitive results. The results of the findings were presented in the table 5.4.

**Table 41:** Multicollinearity Coefficients<sup>a</sup>

Model	Collinearity Statistics	
	Tolerance	VIF
The performance management	0.93	1.08
HR Training	0.94	1.06
The employee retention and engagement	0.98	1.02

a. Dependent Variable: the construction project completion

**Source:** Field Survey, (2023)

The Variance Inflation Factor (VIF) value of 4 or more and a tolerance value of less than 0.2 presents a possibility of multicollinearity. The findings in table 5.6.2 indicated that the tolerance values were above 0.2 and that the VIF values were below 4 indicating that there was no possibility of multicollinearity between variables. Thus, the regression analysis was used to show the relationships between the dependent and independent variables.

### ***Regression Analysis***

Regression analysis is also used to understand which among the independent variables are related to the dependent variable and to explore the forms of these relationships. Also, it was used to examine the relationship between the dependent variable (effective and efficiency).

### ***Model Summary***

The coefficient of determination presented that mentioned the degree to which variations in the dependent variable can be portrayed by changes in the independent variables. A percentage of variation in the dependent variable that is described by all the independent variables also be explained as. The results were presented in Table 5.5.

**Table 5:** Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.830 <sup>a</sup>	.634	.517	.47753

a. Predictors: (Constant), ERE, HRT, PMGT

**Source:** Survey Data, (2023)

The independent variables contributed to 51.7% on dependent variables as represented by the adjusted R<sup>2</sup>. Consequently, the other factors not considered in this research contribute to 48.3% on construction projects.

The coefficient of correlation value of 0.83 indicates that there was a positive and strong correlation between independent and dependent variables.

### *Analysis of Variance*

The study required to establish the overall significance. The results were presented in the Table 5.6.

**Table 5.6:** Analysis of Variance

Indicators	Sum of Squares	df	Mean Square	F	Sig.
Regression	137.393	3	3.464	2.037	.011
Residual	40.135	176	0.228		
Total	141.528	179			

**Source:** Survey Data, (2023)

The findings in the Table 5.6 above showed that the overall model was significant. The overall model was significant as shown by a calculated F statistic of 2.037 (p value 0.011). The calculated F statistics was large than the critical F statistic. The findings indicated that the independent variables are good predictors of dependent variables.

### *The Regression Coefficients*

The regression coefficients of independent variables in this study was presented in Table 5.7 below. The coefficients mentioned the direction and change of dependent variable because of change in the independent variables.

**Table 7:** Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.096	.120		9.146	.000
PMGT	.041	.022	.142	1.845	.047
HRT	.019	.019	.077	1.011	.031
ERE	.018	.020	.068	.914	.036

**Source:** Survey Data, (2023)

As per the SPSS generated table 4.4.3.3above, the equation

$$Y = \beta_0 + \beta_1 \text{PMGT}_1 + \beta_2 \text{HRT}_2 + \beta_3 \text{ERE}_3 + \varepsilon$$

$$Y = 1.096 + 0.041\text{PMGT}_1 + 0.019\text{HRT}_2 + 0.018\text{ERE}_3$$

Using the regression equation above, the dependent variable of the construction project completion (CPC) was 1.096 when all independent

variables, such as performance management (PMGT), HR training (HRT), and employee retention (ERE) were involved.

The results in Table 5.7 above indicated the result was significant and PMGT showed positive significant effect on construction project completion since P value was  $\leq 0.05$ . This implies that an increase in the performance management (PMGT) lead to construction project completion (CPC). Bitamba (2020) reported that the performance of the construction project depended on the availability the construction resources during the project implementation. Also, author mentioned that the project management team performance on the day-to-day decisions at the site was found to be the most important item affecting the factors related to project management. Furthermore, the performance management showed positive in setting the long-term strategies on the construction project completion to maximize the opportunities and alleviate risks (Ahmed, 2018). Contrary the project performance management and project success which had low coefficient with the validation of only the positive influence on project completion successfully. That was to say, it required to the clients and construction company to keep more consideration on the risk management practices in the project implementation.

Apart from that, the HR training (HRT) also had positive and significantly since the P value was  $\leq 0.05$ . The results indicate that presence of the quality trained staff, leadership management, and previous experience in the construction project yield the highest level of productivity and improved an understanding of the lead time required (Bitamba, 2020). In addition, the HR training helped to focus on creating a competent, experienced and professional workforce based on skills, upgrading and knowledge as well as on the enhancement of their skills and abilities that is the most important for the construction projects. Moreover, it also helps to participate energetically in the measurement process and activities which dramatically enhance their construction performance (Ahmed, 2018). The present of the strong human capital and trained base to enable them in stimulating innovation for a systematic and long-term strategy to fulfill construction objectives effectively (Jayabalan et al., 2020). Lasisi et al. (2020) highlighted the role of training and development in the organization that enhances the level of construction innovation development thereby contributing and enhancing employee proactivity.

In summing up, the employee retention and engagement (ERE) had positive and significantly effect on construction project completion with a

P value  $\leq 0.05$ . Ganesh (2023) reported that the employee retention and engagement are the key determinant of long-term and powerful secret success in construction projects for having the valuable talent. Also, the author mentioned that they were crucial for the productivity, continuity, and the development of a positive work environment in construction activities by fostering job satisfaction, loyalty, commitment, and a supportive work environment.

Further, employee retention and engagement had a significant and a positive effect in construction project performance. This result indicates that where highly employee retention and engagement was utilized, the effect of competency manpower in the construction industry was great and very visible in it ends products. Realization of projects completion for handling the technical phase of such contract early that helped to raise efficiency, decrease of accidents, less management, increased organization stability that quality and availability of skilled project team is considered a vital factor in the effectiveness of the project performance (Paul and Kanu, 2018).

## **CONCLUSION AND RECOMMENDATIONS**

The study aimed at finding out the evaluation of the influence of Human Resource Planning on construction project completion in Zanzibar. Based on the results of this study found the following conclusion.

The study concluded that the effect of the performance management influenced function increase effectiveness and accountability in the project management so that it helpsemployees to align their achievements with organization objectives on the construction project completion. Additionally, the study concludes that the performance management influenced to develop managerial leadership and coaching skills in construction project implementation.

The performance management influenced function effect on the construction project completion as it increases effectiveness and accountability, helped employee to align their achievements with organization objectives. The study recommends that there is a need the construction organization to keep more effort on the construction implementation with the project performance management for boosted productivity and the stability of the construction organization sustainability. Additionally, the performance management function improves performance on the construction project completion by setting

individual and team goals which are aligned with the project and setting goals, monitor progress, and offer feedback.

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