



## Assessing the Challenges Facing the Timely Execution of Public Sector Housing Projects in Tanzania

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### Abstract

The study examined the challenges facing the timely execution of public sector housing projects in Tanzania. Current reports showed that the development of urban areas has led to a drastic population increase in urban areas and this causes a great challenge in the housing sector in Tanzania. Specifically, the study examined the extent to which financial constraints, personnel competency and resource mobilization affect the timely execution of public sector housing projects. This was a cross sectional study design that used a sample of 100 individuals. Simple random and stratified sampling procedures were used in selecting the respondents. An additional judgmental sampling technique was also used to collect data for information that deemed confidential and not easy to access through mere random sampling. The mode of data collection was through the use of questionnaires and interviews. The study was conducted at the headquarters of the Tanzania National Housing Corporation in Dar es Salaam. Descriptive statistics and probit regression analysis were applied. The results revealed that financial constraints are a great challenge in the timely execution of public sector housing projects. The results also revealed that workers with more skills affect timely execution of public sector housing projects positively in a sense that the more the experiences, the more likely for public sector to timely execute its housing projects. Furthermore, resource mobilization affects the timely execution of public sector housing project in the sense that the more the people allocated in a project, the more likely it is for it to be timely executed.

**Keywords:** Project execution, financial constraints, personnel competency and resource mobilization.

## **1. A Preamble**

The development of the building industry depends on population growth and the effect of urbanization. According to the available statistics, the current housing deficit in Tanzania is about 3 million units, the annual growth demand being around 300,000 units. The problem is pronounced in urban areas where the population growth seems to go on increasing day by day. Due to different economic and political reasons, population migration from villages to urban areas and other places like the mines has been taking place in Tanzania in the last 50 years. This eventually has been coupled with population growth and hence giving the housing problem a gigantic proportion (Kwanama E, M. 2015).

Urban growth rates in Tanzania, which are hooked at a rate of 3% to 5% over the next forty years, continue to outpace the global average. Dar es Salaam, Tanzania's commercial capital and primate city is one of the world's ten fastest-growing large cities. Already failing to deliver housing and basic services to its urban poor, the Tanzanian government will likely be unable to catch up in the coming decades. In Tanzania, 80% of its population cannot afford to have a decent house because of economic hardships prevailing in the country. A good example is seen in Dar es Salaam whereby a house with two small rooms can be accommodated by 15 people.

The construction projects have proved to be of great help in the context of Tanzania. However, these projects are faced with different controversies since these projects are a mix of very complex processes that rarely go according to the execution plan. Project execution is the stage where all the planned activities are put into action, the project is produced and the performance capabilities are verified. Project execution is the fourth stage in the project cycle followed by reviewing the implemented project as the fifth stage. A project is generally considered to be successfully implemented if it comes in on-schedule (on the due dates anticipated), come in on budget (with minimum extra cost), and achieves all the goals originally set for it and is accepted and used by the clients for whom it is intended (Mbaluku & Bwisa 2013).

Under the Tanzanian Development Vision of 2025, the government of Tanzania has committed to providing adequate, affordable, and quality housing for all citizens, particularly the low-income groups. Tanzania's government has therefore incentivized developers to move down the market by offering, among other things, tax breaks for housing units that cost less.

The Ministry of Lands, Housing and Human Settlements Development (MLHHSD) has been mandated to administer land and human settlement in Tanzania. The Ministry currently has four major Departments namely Land Administration, Survey and Mapping, Physical Planning, and Housing. Within the Ministry also lie four core sector units namely the Registration of Titles Agency, Property Valuation, and the District Land and Housing Tribunal. The Ministry also has an agency dealing with Housing and Building materials research (the National Housing Building Research Agency), a commission dealing with Land Use Planning (National Land Use Planning Commission), and the National Housing Corporation.

The former National Housing Corporation was established by Act of Parliament No. 45 of 1962, whereby for a long time the main property developer in the country has constructed 14,145 housing units between 1962 and 1974 before registering a significant decline in the construction of housing stock as a result of the limited government budget, increased construction costs and high inflation rates.

The current National Housing Corporation is the outcome of the decision of the Government to dissolve the Register of building (RoB) through Act of Parliament No.2 of 1990, which vested its responsibilities with the NHC, since then it has been operating for the past 27 years and has failed to achieve most of its objectives. For example; NHC had planned to develop a minimum

of 15,000 houses for sale and lease by June 2015 but they have failed to construct even 10,000 houses, apart from several projects that have failed to reach 50% of the share and hence the houses were owned by the private partners (NHC 2010).

Some of the reasons which have led the corporation to fail to achieve its planned strategic objectives were the failure of the desired implementation of the written up projects. Previous studies have shown that mismanagement of resources, unfavorable government policies, inefficient public delivery systems, unfavorable economic conditions, and financial problems are the major causes of abandoned housing projects (Hamzah et al, 2015). Every construction project might face some major risks, including costs overrun, schedule delay, unsafe working environment, and low - quality products. As a result, the problems associated with the abandoned or undesired implementation of the housing projects can pose serious problems to the government (national, state, and local government), bankers, purchasers and developers (Siong, 1994).

## **1.2 The problem**

The performance of public sector housing projects remains unsatisfactory in Tanzania as many residential, commercial, and office space (Kavishe 2010). According to a 2016 report by the Controller and Auditor General (CAG) of Tanzania, NHC initiated a TZS 9.4 billion “affordable houses” project called Mwongonzo in Kibada ward; Kigamboni district in Dar es Salaam without first analyzing the needs of its target market. The project, therefore, has a threat of losing its profitability because “prices of the houses it is constructing might not be elastic to enable the NHC to earn the expected profit”.

However, scholars such as Mukhija (2004) have criticized public housing programs for failing to provide quality, affordable, and adequate housing units to the target population in most developing countries. On the contrary view, studies, as reported by Ibem and Amole (2010), by Yeun *et al.* (2006); Sengupta and Tipple (2007); Akinmoladun and Oluwoye (2007); Ademiluyi and Raji (2008); Sengupta and Sharma (2008); Obeng-Odoom (2009); Fernandez-Maldonado and Bredenoord (2010); Mohit *et al.* (2010) suggested that governments in developing countries are not relenting in their efforts at addressing the problem of providing adequate, affordable and sustainable housing.

The provision of adequate housing for everyone as argued by Ubale *et al.* (2013) requires actions not only by governments but by all sectors of the society including the private sectors, non-governmental organizations, communities, and local authorities, as well as partner organizations and entities of the international community. Despite some previous scholars that have demonstrated on the real estate projects and their performances at the national level, few have highlighted the challenges facing the execution of public sector housing projects. This study, therefore, intends to examine empirically and theoretically the challenges that face the timely execution of public sector housing projects in Tanzania, in a case of the National Housing Corporation

### **1.3 Research objectives**

The study assessed the challenges facing the execution of public sector housing projects in Tanzania. Specifically we (1) examined how financial constraints challenge the timely execution of the public sector housing projects, we (2) assessed the effect of personal competency on the timely execution of the public sector housing projects, and lastly, we (3) assessed whether resource mobilization challenges the timely execution of the public sector housing projects.

### **2. The literature underpinnings**

Umulisa *et al.*, (2015) investigated the effects of project resource planning practices on project performance of the Agaseke Project in Kigali, Rwanda. A descriptive research design was used and data was collected using questionnaires which were analyzed using descriptive research design. Financial resource planning practices were found to influence the project performance. Practices such as budgeting, forecasting, and having plans for money generation were found to exist in the project. However, on the other hand, the study outlined these factors as the key challenges to most developing economies due to their staggering nature.

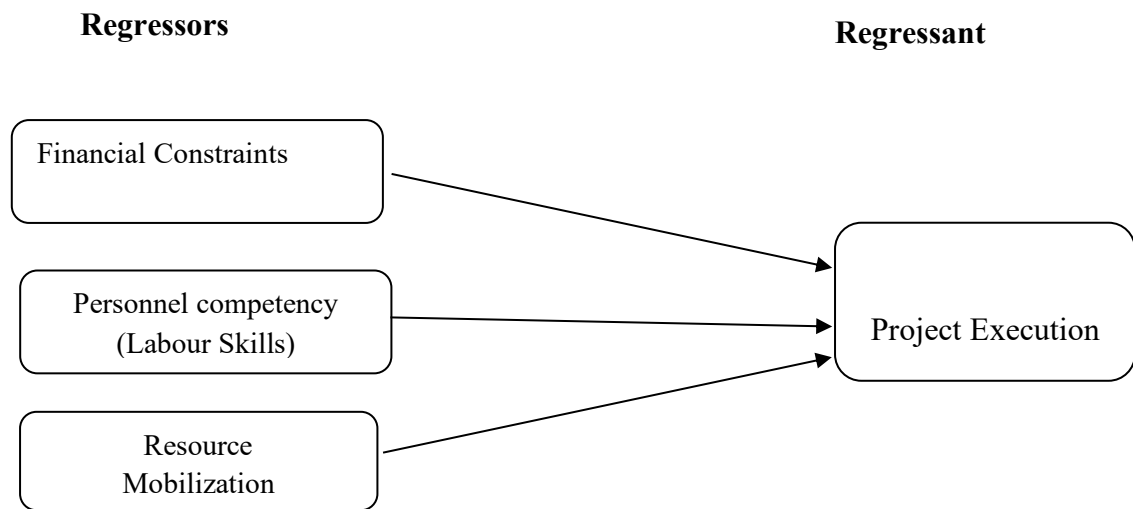
Obegi and Kimutai (2017) investigated the influence of resource scheduling on project implementation and performance of international not-for-profit organizations in Nairobi City County, Kenya. In data analysis, the study employed descriptive statistics to describe the characteristics of each variable. The study established that there exists periodic budget monitoring to measure expenditures against budget, project staff completes their assignments as allocated.

On the other side, different factors can be perceived as main variables that contribute to projects' implementation (Dvir *et al.*, 1998), as levers that can be operated by project managers to increase the chances of obtaining the desired outcomes (Westerveld, 2003). A combination of factors determines the implementation of a project and the influence of these factors at the right time implements the project more probable (Savolainen *et al.*, 2012).

In earlier project management literature the main focus was on identifying generic factors that contribute to projects' implementation and its success. Within the last years, the authors emphasized the existence of different implementation factors depending on project type. The struggle to identify the critical implementation factors is an ongoing topic, approached by many researchers especially due to the pressure of implementing successful projects in a dynamic global market and ever-changing business world (Crisan, 2014), where continuous innovation is a must to achieve competitive advantage (Salanta & Popa, 2014).

### **3. Conceptual Framework**

A conceptual framework by Kothari (2004) is a structure that presents the relationships between the main variables in a given study. A conceptual framework is an analytical tool with several variations and contexts. It is used to make conceptual distinctions and organize ideas. Strong conceptual frameworks capture something real and they do this in a way that is easy to remember and apply. Conceptual frameworks explain the researcher's perceptions of the relationship between variables that are deemed to be vital in a study. Such associations were described in the figure below. To meet the objectives of this study, the study did identify three independent variables which are financial constraints, personnel competency, and resource mobilization. The dependent variable is project execution.



**Figure 1: Conceptual Framework.**

#### **4. Research gap**

Previous studies have tried to evaluate the performance and the implementation scenario of the various projects from a general perspective and more specifically studies have also demonstrated on the real estate projects and their performances in the national level, however, there have been no concrete conclusions or consensus regarding the challenges of executing these projects.

This study intended to bridge this gap by addressing how financial constraints, resource mobilization (number of laborers working in a particular project) and labor competency in the project management affect the timely execution of public sector housing projects Tanzania, in a case of the National Housing Corporation.

#### **5. Research design**

Cross-sectional research design is a research design where the particular study is conducted at one point in time and thus the collection of data is also performed at one point in time from a selected sample of respondents (Kothari, 2004). The cross-section research design was employed in this study for description purposes as well as for the determination of the relationship between and among the variables. The cross-sectional research design was highly preferred due to the nature of the study that studied the particular matter in that point in time and hence the information collected did reveal the challenges facing the execution of public sector housing projects at a time.

#### **6. Area of the study**

This study was specifically conducted in Dar es Salaam, Tanzania. Dar es Salaam has a population of about 4.4million people which are around 10 percent of the whole population in Tanzania. This figure strongly suggests that Dar es Salaam is having more population than other regions in Tanzania and this makes the demand for the housing projects to be greater in Dar es Salaam than in other regions.

Because the National Housing Corporation is among the actively working government housing organizations and that their headquarters are in Dar es Salaam, this pushed a drive to conduct the study at the National Housing Corporation (NHC – HQ) in Dar es Salaam.

## 7. Target population:

The targeted population of this particular study was the staff of the NHC and the NHC project workers regardless of them performing different activities as individuals or in groups.

## 8. Sampling technique:

A sample is a proportion of the whole population that is selected, analyzed and the results obtained are generalized to represent the whole population (Kothari, 2004).

Most of the staff of the NHC and the NHC project workers are not homogeneous in terms of their working activities thus it made it hard to obtain the required information. A simple random and stratified sampling procedures were the ideal techniques for selecting the respondents as samples. This is because the organization comprises departments which are all important for project execution. So in this study, the population was specifically divided into different strata which were the departments, and from each department, a simple random sampling technique was used to select respondents of the research. This led to the selection of an unbiased sample to represent the entire population. Where some information was missing, the study also employed the use of judgmental sampling to get specific (classified) information.

### 8.1 Sample size

A sample is the collection of some elements of the population on which the conclusion is completed (Kothari, 2004). The sample should neither be comprehensively large or not excessively small to save time and resources, make data convenient and exact representation of the population selected. The sample size can be defined as the number of objects to be selected from the population to establish a sample. The Effective sample size is the one that accomplishes the necessities of diversity, efficiency, representativeness, accessibility, reliability, and flexibility. This study, therefore, selected a total of 100 sample respondents to represent the total population of 768 people at a confidence level of 90%. As derived from Yamane (1967), the following sample size mathematical formula was used to estimate the preferred sample size of the local people;

$$\text{Sample} = \frac{N}{1+N(e)^2}$$

Whereby: N is the Total number of people = 768, n is the Number of respondents, and e is the sampling error = 10%

$$\text{Sample} = \frac{768}{1+768(0.1)^2}$$

Whereby: N is the Total number of people = 768, n is the number of respondents, and e is the sampling error = 10%

$$\text{Sample} = 88.47926267$$

However, according to Kothari (2004) any amount of sample can be selected as long as it is above the initially calculated sample, thus this study did select 100 respondents as the amount of sample for data collection.

### 8.2 Data Collection

This research employed the use of primary and secondary data. Primary data consists of straight from the field. Secondary data consists of all the information obtained from reading

different reports on the housing sector in Tanzania. Data was collected using two major instruments, namely, questionnaires and interviews.

## **9. Data Analysis:**

This study employed both descriptive and econometric analysis techniques in evaluating how financial constraints, resources mobilization, and labor competency affect timely project execution at the National Housing Corporation.

### **9.1 Descriptive analysis**

Descriptive statistics were used give a summary of the data represented in the research. This analysis was given to describe the basic features of the study and give a reader a glimpse idea of what the research's outcomes portrays. Raw data obtained from the study were summarized in an excel sheet and with the aid of STATA econometrics package graphs, frequency tables and charts were obtained to represent the data.

### **9.2 Econometric analysis**

The nature of the study needed an econometric analysis which could encounter evaluating the binary responses. Three main models are commonly used in evaluating binary responses which are, the probit model, the logistic regression model (logit), and linear probability model (LPM). This study employed the probit model to estimate the effect of the explanatory (independent) variable on the challenges facing the timely execution of public sector housing projects. The nature of the study conducted is not an ordinary linear regression study. This was due to the fact the dependent variable was also a binary response.

The nature of this study employed a discrete choice model branching specifically in the use of a simple probit model. A probit model is a popular specification for an ordinal or a binary response model, thus being in favor of the study due to the nature of the dependent variable (execution) being binary. The probit model has proven to be more efficient in estimating more accurately its response than the logistic model and the linear probability model. The probit model assumes a normal probability density function. Considering all that, the study focused on using the probit model.

The probit model, however, worked basing on the following two main assumptions:

- The observations on the dependent variable (Y) were randomly sampled from the population of concern,
- The dependent variable (Y) was also associated with the independent variables (X's), while the independent variables were determined by the influence outside the model.

Furthermore, the distribution of disturbance/error term was measured to conclude that the model chosen was suitable, and that the model was normally distributed with the same mean and variance.

The decision to use the probit model over the other was because probit follows the cumulative distribution function of the standard normal distribution, unlike the logit model which follows the cumulative distribution function of the logistic distribution. Also, since the linear probability models did not satisfy the ordinary least square assumptions cannot be preferred over the probit model in this study. However, from empirical standpoints both probit and logit typically yield the very similar results. These two models also satisfy the probability assumption for the outcome to fall between 0 and 1. However in this study the researcher preferred to the use of the probit model simply because in economics the requirements of the standard normal distribution are considered more realistic.

The model used explicitly was expressed as;

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu$$

Where:

$Y_i$  = Timely execution of a public sector housing project

$\beta_0$  = constant

$\beta_i$  = estimated coefficients of the explanatory variables

$X_i$  = explanatory variables (financial constraints, resource mobilization and personal competency. Whereby financial constraints and personnel competency are dummy variables.

$\mu$  = disturbance term

## 10. The Findings

### 10.1 Response rate:

A total of 100 questionnaires were distributed to the sample population of 100 respondents to different NHC departments and different project sites specifically in Dar es Salaam. However, a total of 90 questionnaires were well answered and the questionnaires from the respondents were collected back successfully. The response rate achieved was 90 percent, due to simple constructed questions as well as the presence of the researcher in the field area. However, 90 respondents still concurs with the initial calculated amount of sample that was to be 88.479.

**Table 1 Questionnaire response rate**

Response	Frequency	Percentage
Returned	90	90.00
Not returned	10	10.00
Total	100	100.00

Source, Research data 2020

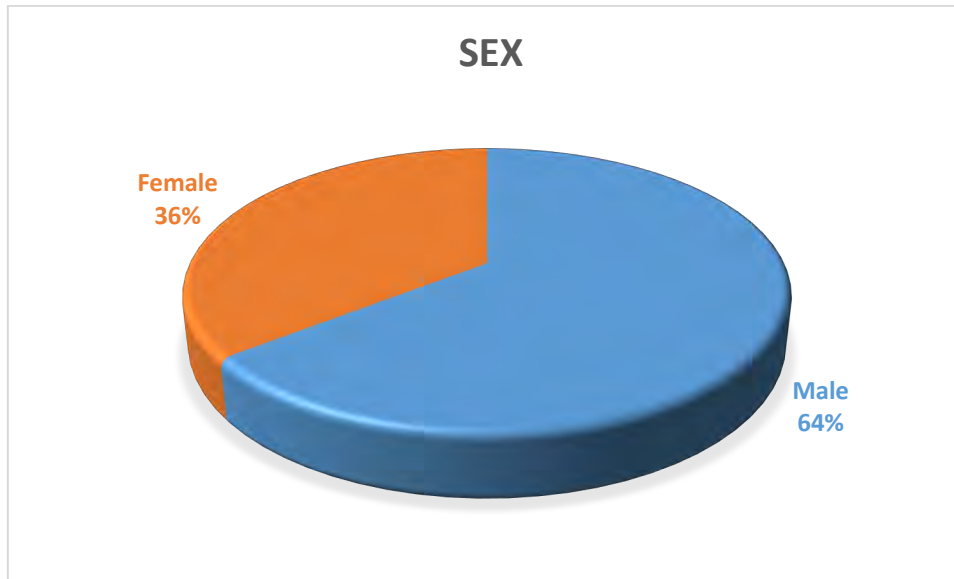
### 10.2 Descriptive Analysis:

The descriptive analysis was used to describe the fundamental features or nature of the respondents in the study. They provide simple key summaries about the collected and analysed data. This analysis provided the basis of virtually every quantitative analysis of data.

#### 10.2.1 Distribution of respondents based on gender:

The distribution of respondents basing on gender was assessed in the study as one of the demographic characteristics of the respondents so as to determine the disparities between male and female in the NHC projects and the NHC work area.





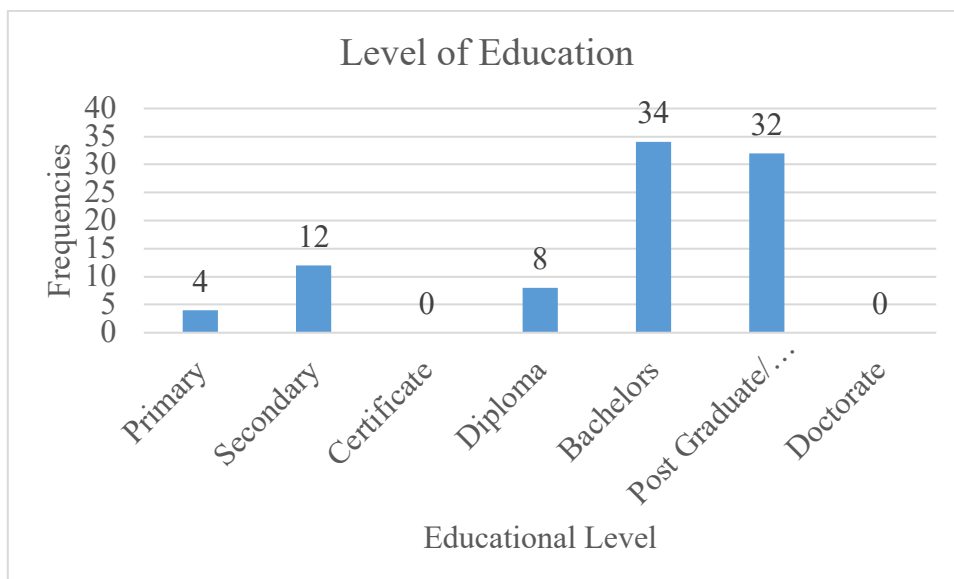
**Figure 1. Distribution of respondents by sex:**

*Source, Research data 2020*

Figure 1 reveals that the most dominant gender among the respondents was male, whereby 58 (64 percent) of the respondents were males and 32 (36 percent) of the respondents were females. These results show that males are more prone and dominant gender to most of the NHC projects and work areas as compared to their female counterparts who have proved to have less presence in the NHC fields of work.

### 10.2.3 Distribution of respondents based on the level of education:

The distribution of the respondents by their level of education was assessed as one of the demographic characteristics of the respondents so as to determine the academic qualification or the level of education of the respondents in the particular area of study. Furthermore, the level of education was assessed so as to determine the level of education of the NHC project workers and employees.



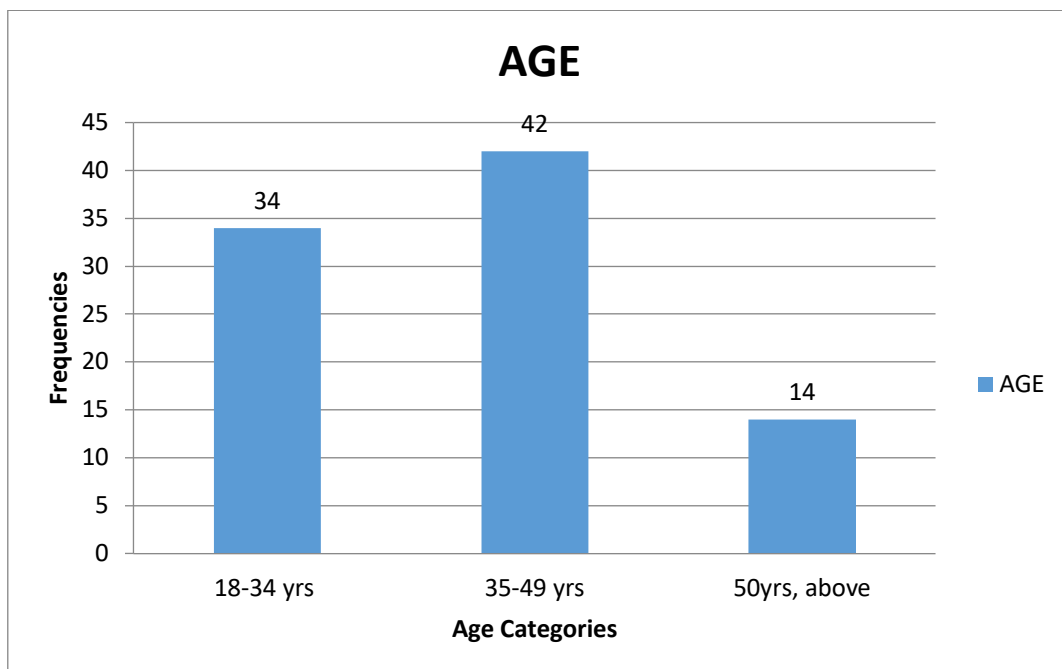
**Figure 2. Distribution of respondents by the level of education:**

Source, Research data 2020

The Figure 2 above reveals that majority of the NHC project workers 34 people (38%) had a Bachelor’s Degree followed by 32 people (36%) with a post graduate/master’s degree Furthermore 8 people comprising of 9% of the studied respondents had a diploma. 12 people (13%) had at least finished their form 4 and 4 people (4%) were primary leavers. These results implied that most of the NHC project workers and employees are well educated thus can enhance an efficient performance of the NHC as a corporation and its housing projects.

**10.3.3 Distribution of respondents based on Age:**

The distribution of the respondents by their age was assessed in the study as one of the demographic characteristics of the respondents so as to determine the age group of most NHC project workers and the NHC workers. Since a blend of a mixture of different age categories within a project yields different experiences and hence an adequate performance.



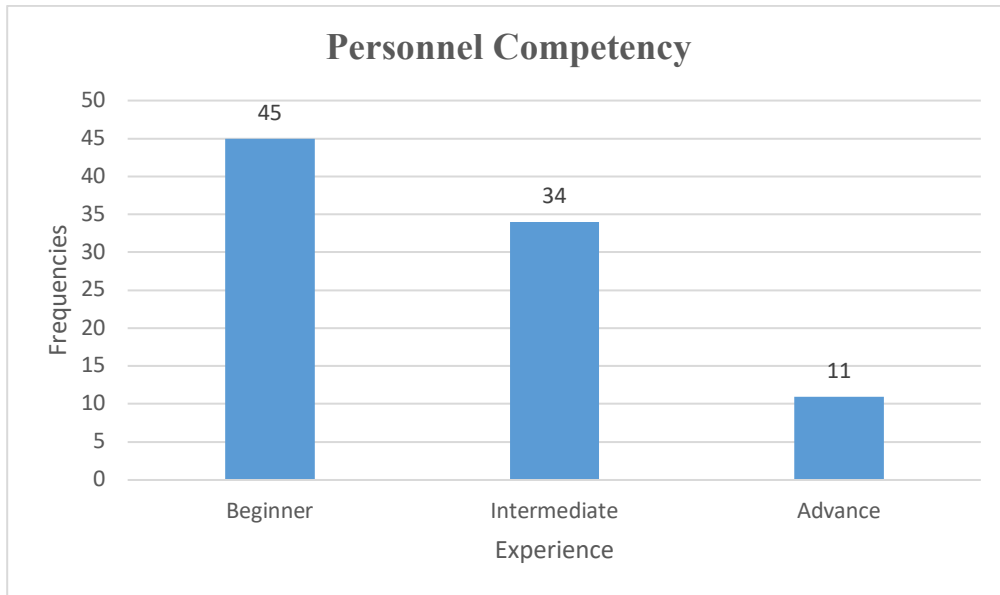
**Figure 3 Distribution of respondents by age:**

Source, Research data 2020

Figure 3 shows the frequencies of respondents according to their ages. Findings revealed that majority of the respondents 42 people (46.6%) were middle-age adults that were categorized from 35 years to 49. Furthermore, 34 people percent (37.7%) were aged 18 to 34 years of age and lastly 14 respondents (15.5 percent) where aged above 50 years. These findings revealed that the workforce of the NHC projects and the NHC workers, in general, were ideal distributed by age thus making an execution and performance of the projects easy

**10.3.4 Awareness on Project Management (Personal competency):**

An analysis on the descriptive statistics on the respondents by their personal competency was assessed in the study as one of the demographic characteristics of the respondents so as to determine the level of competency among the NHC employees and the project workers. Furthermore to determine how this level of competency can affect a timely execution of the project.



**Figure 4 Distribution of respondents by the competency level:**

Source, Research data 2020

Figure 4 above presents the distribution of respondent’s level of competency from the field study. The findings revealed that majority of the respondents were beginners’ that is they had only little experience in the field (0 – 2 years of experience) this was proved by the figures obtained in the study that showed that 45 people (50%) where beginners’’. On the other hand, 34 people (38%) had an intermediate level of competency that is basically 3 to 4 years’ experience and finally, only 11 respondents, equivalent to 12 percent of the respondents had an advanced level of competency, which is specifically a 5-year experience on the field project management.

**Table 2 Summary of the responses in a Likert scale**

	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
		%		%		%		%		%
<b>Timely execution of projects</b>	4	4.4	12	13.3	18	20	32	35.5	24	26.6
<b>Financial Constraints</b>	45	50	23	25.5	8	8.8	11	12.2	3	3.3
<b>Personnel Competency</b>	34	37.7	8	8.8	5	5.5	27	30	16	17.7
<b>Resource Mobilization</b>	52	57.7	18	20	11	12.2	8	8.8	1	1.1

Source, Research data 2020

Table2 shows the responses of the respondents on the extent to which they thought that the factors studied in this research affect timely execution of projects.

#### **Timely Execution of projects.**

4 respondents (4%) strongly agreed that the projects under the National Housing Corporation are timely executed. 12 respondents (13%) agreed that the projects under the National Housing Corporation are timely executed. 18 respondents (20%) were neutral on the idea that the National Housing projects are timely executed. 32 people (36%) disagreed on the idea that the National Housing Corporation projects are timely executed and 24 people (27%) strongly disagreed on the idea that the National Housing projects are timely executed.

This means that out of 90 responses 16 respondents (17%) agreed on the idea that the projects under the National Housing Corporation are timely executed. 18 respondents (20%) were neutral while 56 respondents (63%) disagreed on the idea that the National Housing Corporations projects being timely executed.

#### **Financial Constraints**

45 respondents (50%) strongly agreed that NHC faces financial constraints in the timely execution of its projects. 23 respondents (26%) agreed that NHC faces financial constraints in the timely execution of its projects. 8 respondents (9%) were neutral on the idea that NHC faces financial constraints in the timely execution of its projects. 11 people (12%) disagreed on the idea that NHC faces financial constraints in the timely execution of its projects and 3 people (3%) strongly disagreed on the idea that NHC faces financial constraints in the timely execution of its projects.

This means that out of 90 responses 68 respondents (76%) agreed on the idea that NHC faces financial constraints in the timely execution of its projects. 8 respondents (9%) were neutral while 13 respondents (15%) disagreed on the idea that NHC faces financial constraints in the timely execution of its projects.

#### **Personnel Competency**

34 respondents (38%) strongly agreed that personnel competency of the workers working in the Corporation affects the timely execution of its projects. 8 respondents (9%) agreed that personnel competency of the workers working in the Corporation affects the timely execution of its projects. 5 respondents (6%) were neutral on the idea that personnel competency of the workers working in the Corporation affects the timely execution of its projects. 27 people (30%) disagreed on the idea that personnel competency of the workers working in the Corporation affects the timely execution of its projects and 16 people (17%) strongly disagreed on the idea that personnel competency of the workers working in the Corporation affects the timely execution of its projects.

This means that out of 90 responses 42 respondents (46%) agreed on the idea that personnel competency of the workers working in the Corporation affects the timely execution of its projects. 5 respondents (6%) were neutral while 43 respondents (48%) disagreed on the idea that personnel competency of the workers working in the Corporation affects the timely execution of its projects.

#### **Resource Mobilization**

52 respondents (58%) strongly agreed that resource mobilization (in terms of the number of workers working in a particular project) affects the timely execution of its projects. 18 respondents (20%) agreed that resource mobilization (in terms of the number of workers

working in a particular project) affects the timely execution of its projects. 11 respondents (12%) were neutral on the idea that resource mobilization (in terms of the number of workers working in a particular project) affects the timely execution of its projects. 8 people (9%) disagreed on the idea that resource mobilization (in terms of the number of workers working in a particular project) affects the timely execution of its projects and 1 person (1%) strongly disagreed on the idea that resource mobilization (in terms of the number of workers working in a particular project) affects the timely execution of its projects.

This means that out of 90 responses 70 respondents (78%) agreed on the idea that resource mobilization (in terms of the number of workers working in a particular project) affects the timely execution of its projects. 11 respondents (12%) were neutral while 9 respondents (9%) disagreed on the idea that resource mobilization (in terms of the number of workers working in a particular project) affects the timely execution of its projects.

#### 10. 4. Econometric results

**Chart 1 Probit model result on challenges facing the execution of public sector housing projects in Tanzania a case of the National Housing Corporation**

```

. probit PExc FCnstD1 PCompD1 PCompD2 LnRMob

Iteration 0:  log likelihood = -53.175802
Iteration 1:  log likelihood = -17.094253
Iteration 2:  log likelihood = -14.929826
Iteration 3:  log likelihood = -14.785029
Iteration 4:  log likelihood = -14.784589
Iteration 5:  log likelihood = -14.784589

Probit regression                               Number of obs   =          90
                                                LR chi2(4)      =          76.78
                                                Prob > chi2     =          0.0000
Log likelihood = -14.784589                    Pseudo R2      =          0.7220
    
```

PExc	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
FCnstD1	-1.736204	.6531412	-2.66	0.008	-3.016337	-.4560708
PCompD1	-1.993751	.7341161	-2.72	0.007	-3.432592	-.5549098
PCompD2	-1.194943	.893926	-1.34	0.181	-2.947006	.5571198
LnRMob	1.149542	.3517147	3.27	0.001	.4601935	1.83889
_cons	-5.183567	1.900187	-2.73	0.006	-8.907865	-1.459268

Source, Research results 2020

##### 10.4.1 The challenge of financial constraints to the execution of Public sector housing projects.

The results from Chart 1 revealed that considering all other variables are constant, the variable financial constraints denoted by the word “FCnstD1” was statistically significant at 5 percent level of significance. This was due to the fact that it’s P Value which was 0.008 is less than 5% (0.05). With this outcome, the null hypothesis of this study which stated that financial constraints do not affect the timely execution of projects was rejected.

This outcome was furtherly translated as, considering all other factors are constant, projects implemented under no financial constrains are executed more timely than the projects which are affected by financial constraints.

Findings received from the research study revealed that the National Housing Corporation's sources of finance are categorized into two which are internal sources and external sources. Internal sources are like rental incomes and sales profit that results from selling or renting of the NHC apartments, houses and other NHC owned buildings. The revenues obtained from these sources are not enough to finance all the projects and so due to this the Corporation mostly depends on the external sources of revenue the major one being loans. The Corporation does not directly receive money from the government however; the government gives the Corporation licences to go secure loans from banks at a reasonable interest. Lately these licenses are not provided on time and so acts as a challenge to the Corporation to have access of securing loans from banks. As an outcome, funds become few and projects' implementation slows down. Example Kawe Project and Morocco Square are some of the projects which have slowed down due to this constraint.

#### **10.4.2 The challenge of Competency and the execution of public sector housing projects**

Chart 1 results reveal that the concept Personnel Competency was categorized into three parts which are people who are beginners in the project management industry, intermediate and advanced. The bench mark category was intermediate and so this concept gave rise to two dummy variables which are "PCompD1" representing Beginners vs Intermediates and "PCompD2" representing Advanced Vs Intermediate. Considering all other variables are constant the Variable "PCompD1" was significant at 5% level of significance. This is because its P Value which was 0.007 is less than 5%.

This outcome was furtherly translated as workers who have an intermediate knowledge in project management have a greater probability in timely executing the Corporation's project than workers who are beginners.

#### **10.4.3 The challenge of Resource mobilization constraints to the execution of Public sector housing projects**

Chart 1 results reveal that considering all other variables are constant Resource Mobilization denoted by the word "LnRMob" implying the amount of workers enrolled for the projects was statistically significant at 5 percent level of significance since its P Value which was 0.001 was below than 5 percent (0.05). With this we reject the null hypothesis that states that resource mobilization does not affect the timely execution of housing projects.

This outcome was furtherly interpreted as, holding all other variables constant an increase in Resource mobilization (enrolled workers) by one leads to an increase in the number of projects which are timely executed by 115%.

Moreover, findings reveal that resources especially the human resources enrolled in the NHC projects aren't quite enough thus making a delay in the execution of the NHC housing project. Furthermore, findings reveal that not only the human resources but also the overall material resources that are needed for execution of the NHC projects especially those that are to be executed from this year (2020) aren't quite enough. Specifically materials such as equipments, plants and machines aren't quite enough. Moreover findings reveal that the NHC has a huge shortage of well sufficient and experienced engineers and project managers and project skilled oriented labours in different departments.

### **11. Concluding Remarks:**

It was seen in this study that financial constraints, resource mobilization and competency are the major challenging factor for the execution of the public sector housing project in especially for the case of the National Housing Corporation housing projects. Thus, in order to ensure and an adequate and timely execution of these projects these challenges should be adhered efficiently. This means that there should be enough funds dedicated to the projects, adequate enrolment of employees but also the employees should be competent and fit professionally for their specific required positions.

### **12. Recommendations:**

Based on the findings of the study basing on the responses from the respondents at the National Housing Corporation, project field workers and literature review, the study recommends that the government through the Ministry of Lands, Housing and Human Settlements Developments must specify a well-defined and reliable source of finance, in financing the public sector housing projects. Nevertheless the government should also resolve to find better ways that can ensure the corporation with the required finances to execute its projects once the projects have been given an approval to be executed. The fact that the corporation need to have a licence to borrow its funds should be re-evaluated and solutions should be figured out as to how these licences can be provided on time and that even the loans received are given to the organization at a reasonable interest rate.

The study also recommends that the project workers and staffs should be regularly trained so as to achieve the required and intended project target and performance. There should also be periodic refresher courses for the project and the monitoring and evaluation staff to keep them updated in their fields. New comers in the project management industry should also be given more training and practical experiences so as to make them more familiar on the basics of project management and execution. This will make them more effective. In order to also improve the competency of workers, students in higher learning institutions should be given more opportunities to get practical trainings and internship opportunities in their fields so as to make them familiar and aware of what actually happens in the real world scenario rather than facing brand new challenges with no practical experiences when they start their jobs.

When preparing the project proposals for any projects, the Corporation should ensure that they have allocated enough workers to work in that particular project. This will solve the problem of not having enough workers to do a certain project on time.

Finally the study does recommend that the National Housing Corporation (NHC) should consider institutionalizing monitoring and evaluation for every implemented project, so as to create an adequate monitoring and evaluation unit which will eventually enhance an adequate performance and monitor a timely implementation

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