

# An Evaluation Of Challenges Affecting The Phases Of A Housing Project Life Cycle In Abuja, Nigeria.

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## Abstract

**Background:** Challenges are detrimental to the housing project process, which has many times manifested in housing shortage in Nigeria. Nigeria's housing shortage currently stands at about 24 million deficit units. The ability to address these challenges will determine the seamless execution of the housing project process and an increase in units. To successfully mitigate housing project challenges, it becomes imperative to evaluate these challenges along the five life cycle phases so as to determine the degree of their detrimental impact, hence the aim of the study was to determine the impact of these challenges in the project process along the life cycle phases in Abuja, Nigeria.

**Materials and Methods:** This study collated housing project challenges from past literature, grouped them into the five phases of the project life cycle and subjected same to professionals in four construction firms in the built industry in Abuja Nigeria so as to rank these challenges. The respondents were grouped into clients, contractors, consultants and government officials. The opinions of these grouped professionals' 'as respondents', intended to provide information on the detrimental impact of these challenges on construction stakeholders and how the challenges affect the delivery process in housing projects. The study employed the descriptive research design, quantitative design method, case study research strategy, cross-sectional time horizon, and multi-stage sampling technique. The data analysis tools adopted for the study were mean rating and Kruskal Wallis Test respectively.

**Results:** The study found that the five most detrimental challenges to the housing project life cycle are: Land acquisition issues; Lack of commitment from construction firms' stakeholders; Faulty design issues; Poor supervision and control and the use of inferior building materials. The study recommends that land must be properly investigated prior to purchase to ensure that it is free from any encumbrance and, stakeholder interests need to be protected as both primary and secondary stakeholders represent the catalyst needed to advance the housing project. Information on the ranking of the challenges will inform project stakeholders on level of detrimental effect as they execute the housing project process.

**Keywords:** Housing; Project; Challenges; Stakeholders.

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## I. Introduction

Considering the state of housing deficit in Nigeria which was at upwards of 24 million housing units as at 2023, the need to scale up supply becomes ever more important. There are arguments from a number of researchers that Nigeria's housing deficit is as a result of challenges that affect housing development<sup>20</sup>. To effectively scale up supply, these challenges in the management of housing projects would have to be effectively addressed. In addition, housing project challenges need to be effectively addressed along the project life cycle to guarantee project success. Inability to promptly address setbacks in a housing project setting can have an adverse effect on aspects of the project, hence the need to act early enough as a means to achieve the requisite housing supply.

Management of a construction project draws on ten areas being: integration; scope; time; cost; quality; procurement; human resources; communications; risk management and stakeholder management<sup>20</sup>. However, the inability to effectively implement these areas will negatively affect a housing project by springing up challenges with a resultant cost and time overruns. Challenges exist in every aspect of service delivery; and the management of housing projects is not an exception. As established by project management scholars and practitioners, every project consists of a number of different phases which form the life cycle (or life span) of

each project. In the early years of the development of modern project management practices, it was common to see each phase of a project being planned, scheduled and managed as a separate project, from start to finish of each phase<sup>4</sup>. Project managers frequently have a tendency to work on several tasks at once that cover every step of the life cycle. This can be problematic because the trend typically leads to difficult decisions during the planning, design, and execution phases of a project. This can result in conflicts that will probably carry over into earlier stages, particularly from the planning to design phases and then to the housing project's execution.

## **II. Literature Review**

Housing project challenges need to be effectively addressed to guarantee project success. Inability to promptly address setbacks in a housing project setting can have an adverse effect on other aspects of the project, hence the need to act early enough as a means to achieve the requisite housing supply. Robust literature was carefully and critically perused and analyzed to investigate housing projects so as to determine the various challenges which have marred the process along the five life cycle phases. Some of these challenges are either man made or natural, however the case, they have posed multitude degree of setbacks based on their respective nature with negative effects on the housing project outcome.

Some sources of challenges in housing projects are: engaging the services of unskilled workmen; inadequate housing finance; high level of urbanization in many cases; poor policy programmes and a contravention of building standards in addition to poor building materials<sup>20</sup>. Challenges vary in nature and abound all through a housing project. To efficiently dissect these challenges and their impact in a housing project, it becomes imperative to review the challenges and their impact along the five life cycle phases respectively as some challenges may be evidently visible in just one phase or multiple phases. Furthermore, the challenges may have a myriad of effects on one phase as distinct from others. Some sources of challenges in housing projects are: engaging the services of unskilled workmen; inadequate housing finance; high level of urbanization in many cases; poor policy programs and a contravention of building standards in addition to poor building materials<sup>20</sup>. Some other sources of challenges in housing projects are land related issues; bureaucratic processes; high cost of development; slow rate of technology adoption and inadequate infrastructure.

### **Sources of challenges in a housing project life cycle**

A housing project starts with the conceptualisation to embark on a housing project and ends when its end product has been delivered to the owner, investor, marketer or user in accordance with the housing project contract or internal project charter. The management of a housing project can best be implemented by effectively administering the requirements in each phase of a housing project life cycle<sup>9</sup>. It is obvious that a standard housing project life cycle comes to an end when the housing project phases are complete. The project life cycle ends the moment the house is handed over, begins to be used, sold or placed in operation, thus producing the benefits that justified the project in the first place. There may be noticeable and re-occurring overlap in the activities of project life cycle phases based on the varying nature of projects, but an organised project setting is most likely to achieve the required result.

Challenges are present in all aspects of service delivery. The management of housing projects has indicated continuous presence of challenges in the project life cycle. As already established, every project consists of a number of different phases which form the life cycle (or life span) of each project. In the early years of the development of modern project management practices, it was common to see each phase of a project being planned, scheduled and managed as a separate project, from start to finish of each phase<sup>1</sup>. Project managers often engage in multiple project services inefficiently at the same time, spanning the entire life cycle. This can present challenges because the trend typically leads to decision-making difficulties during the design, planning, and execution phases, resulting in project conflicts that are likely to carry over into earlier stages, particularly from the planning to design phases, and ultimately to the execution of housing projects.

Often in the past, project managers had to solve challenges during the construction phase that should have been solved during the initiation, planning or design phase. As project management practice advanced, it was observed that effectively overlapping project phases when made practical could save a considerable amount of time and money, but came with the risk of complications as a repercussion<sup>20</sup>. Consequently, this can also prevent a project manager from maintaining proper control of the entire project life cycle which is a catalyst to arising project conflicts as early as possible in the project life cycle. Early resolution for arising project conflicts, on a phase to phase basis, can be advantageous in managing housing projects as it can ensure that challenges are promptly curbed early enough and in an organised manner.

Project management information systems can be beneficial towards advancing a housing project life cycle as the system ensures the efficient and organised passage of information among housing project life cycle phases. As the power of project management information systems grew over recent decades based on rapid advances in computer supported systems and information technology in general, the power and benefits of documenting and integrating all of the project life cycle phases became more evident and more important<sup>21</sup>.

Project management information systems can help a housing project such that modern day organisation techniques are imputed in the project life cycle phases as it ensures promptness and precision in project activities. The use of management information systems has further led to the modern-day development and use of a number of project life cycle process models consisting of a number of phases or stages and related decision points for the many different project categories and sub-categories that exist. The models within each category and sub-category show similarities but in most cases, there may not be significant differences from one category/sub-category to the next<sup>20</sup>.

### **Challenges in a housing project life cycle**

Challenges exist in every aspect of service delivery; and the management of housing projects along the life cycle phases is not an exception. As already established, every project consists of a number of different phases which form the life cycle (or life span) of each project. In the early years of the development of modern project management practices, it was common to see each phase of a project being planned, scheduled and managed as a separate project, from start to finish of each phase<sup>22</sup>. Frequently, project managers tend to engage in multiple activities at the same time which spans all through the life cycle stages which can pose challenges because this trend usually results in decision complications within design, planning and execution phases, giving rise to project conflicts which will likely be carried forward into preceding stages, especially from the planning to design phases; and then to execution of housing projects<sup>26</sup>.

In the past, it was common for project managers to have to deal with issues that should have been resolved at the beginning, planning, or design stages of the project. As project management techniques developed, it was discovered that, although it carried a risk of problems, successfully overlapping project stages could, when feasible, save a significant amount of time and money<sup>20</sup>. As a result, this may also make it difficult for a project manager to exercise appropriate control over the course of the project, which might lead to the emergence of project conflicts as early in the process as feasible. In housing project management, early phase-by-phase settlement of emerging disputes can be helpful since it can guarantee that problems are quickly addressed early on.

There is a generally held understanding and acceptance across myriad practitioners that the four broad and generic project phases are: starting the project (concept; authorisation; initiation; identification; selection; project charter and business case; planning, scheduling), organising and preparing (definition; feasibility confirmation; development; demonstration, design prototype; quantification) and carrying out the work (execution; implementation; realisation; production and deployment; design/construct/commission; installation and test). However, a bundled model of the phases can be: initiation phase; planning phase; design phase; execution and construction; to include commissioning the project. This study employed the bundled model based on reference purpose as it presents a more streamlined concept.

### **Initiation phase and its challenges in a housing project life cycle**

The project initiation phase is the first phase in the housing project management life cycle. This phase basically has to do with conceptualising and starting a new housing project by a client and firm. The initiation phase of a housing project life cycle can be prone to challenges as several activities are performed in this phase and it represents a foundation for other project phases. In order to avoid unforeseen challenges, a new housing project can be started by defining project objectives, scope, purpose and deliverables which help to guide the path of the project<sup>14</sup>. To gain approval to begin the next phase which has hindered projects. This is very important because it sets the stage for a housing project<sup>20</sup>. During project initiation, there is a need for a project manager or appointed consultant to plan how an authorised project is to be implemented as this will ensure client satisfaction and profit maximisation<sup>16</sup>.

The importance of proper project conceptualisation and scheduling may be taken for granted which many project managers do consider adequately prior to embarking on housing projects and this has a consequence on project outcome<sup>18</sup>. Many housing projects have failed due to poor conceptualisation and implementation<sup>10</sup>. It is very important for construction establishments to consider an approach that would be taken to manage and carry out the project, select the project delivery method, assess the type and size of resources needed for the project and targeted delivery time, in housing project initiation<sup>2</sup>. These will also help to decrease project complications during the life cycle phases. By so doing also, the housing project can move in a flowing manner in anticipation of the next life cycle phase. Initiation concludes with engaging a selected construction establishment with the necessary skill, experience and expertise<sup>2</sup>. Past experience and expertise can be put into consideration in this selection process.

Some of the collated challenges from literature which are detrimental to initiation phase project activities are: faulty forecasting, poor project fund allocation, poor project budgeting, lack of feasibility study, lack of viability study, failure to properly define project, inadequate amenities, poor infrastructure, weak project initiatives and poor housing project sensitisation. Others include: inability to mobilise contractors, low

government assistance in projects, inadequate housing project financiers, poor attitude of housing project stakeholders, weak project policies, poor resource mobilisation, erratic contract negotiations and unrealistic expectations from clients or partners. These challenges if not mitigated, can affect the entire planning process of the project.

### **Planning phase and its challenges in a housing project life cycle**

Effective housing project management calls for effective planning as a means of avoiding project challenges. Housing project planning usually starts after project initiation and continues through alternative analysis and should be significantly completed at the end of preliminary construction. The major activities in a project planning phase, which are often neglected, are: functional analysis, alternative studies, site selection, hazardous material and geotechnical studies; utility and third-party coordination and environmental compliance with state and federal laws<sup>8</sup>. These activities require expertise at every level to achieve housing project success. In large housing projects, managers engaged in planning assignments can often be tasked with the responsibility of also engaging in new project requirements alongside the management of other responsibilities which can be demanding. This can be called multi-tasking in housing project management and seeks to ensure that multiple activities occur routinely to ensure time and financial optimisation<sup>15</sup>. With the sensitive nature of the planning phase of housing projects, one visible disadvantage is poor manner with which construction firms engage project managers without prior project management experience to navigate the project process<sup>6</sup>. This presents a path way for a disorganised structure which accentuates challenges.

To properly manage a project, it is vital for a firm at the planning phase to strategize on choice of design experts that will be engaged to take projects through completion of the engineering and structural phases<sup>25</sup>. This will avoid the possibility of structural challenges which makes useless the entire process of housing project management. Project planning phase also comes with a strong need to have well defined separation between allotted teams. The collated housing project challenges from literature which can be detrimental to the planning phase of a housing project life cycle are: late site delivery to construction firm; poor project funding; faulty documentation (feasibility report, drawings, technical specification, bill of quantity); task collusion during project; poor organisational framework; poor scheduling; poor planning; poor site allocation; poor resource distribution; diversion of project funds; land acquisition issues; delay in Certificate of Occupancy follow up to include poor loan arrangement. Others are poor project infrastructure and layout; poor choice of contractors; poor devolution of responsibilities; inability to create enabling environment and inflated contract quotes. These setbacks are likely to influence decisions needed to advance the project in the design phase of the life cycle.

### **Design phase and its challenges in a housing project life cycle**

The design phase is a very sensitive phase in a housing project life cycle and is also susceptible to challenges. The design phase is anticipated to take project requirements through a conceptual design to the final design and construction documents for which contractors can also use to bid on as well as have a clear understanding of a project's scope<sup>16</sup>. A design can either be carried out in-house by a firm or a consultant who can be chosen through a proper procurement process, or based on recognition<sup>25</sup>. In order to avoid the cumbersome nature of housing project challenges, there is a need to closely monitor the scope of work in design and equally monitor its progress regardless of how it is being carried out to ensure that it fits the clients' requirement and it is achievable within the stipulated financial projection and time frame.

It becomes vital to note that some design consultants have over the years failed to develop graphic plans based on functional and safety requirements for projects and in addition, usually fail to do a proper investigation of housing project sites so as to match design with what is on ground<sup>5</sup>. The expectations from a proper conceptual design in projects are: a set of architectural plans; elevations; landscaping plan; site boundary and topographic surveys. Depending on project site complexity, a design may include some drawings which centre on grading, utility and drainage plans<sup>11</sup>. As a means to avoid complications, a design team should work towards taking a design from the conceptual stage to a level that defines all significant elements that will enable a more accurate estimate of the construction project costs and anticipated impediments. Already developed technical and cost documents can always serve as a basis for subsequent design, funding and implementation decisions in housing projects, provided they were done properly<sup>7</sup>. Some of the design phase challenges collated from literature which can affect activities in a housing project include: inappropriate design; faulty design; uneconomic design; late site delivery; poor design interpretation; delay in correcting design changes; design change during housing project; unachievable designs and improper design interpretation. These design issues will impact negatively on project execution.

### **Execution phase and its challenges in a housing project life cycle**

The execution phase of a housing project is also prone to challenges which need tackling. The execution or construction phase is the period during which a project manager takes control of the project site to carry out the construction works<sup>3,25</sup>. When the works are complete, the construction firm is most often expected to hand the site back. The construction phase should not involve the client as much on a day to day basis and the majority of actions and responsibilities lie with the project manager, but clients often impose themselves in projects<sup>12</sup>. Many housing projects are likely to experience client interruption on sites which affects work flow<sup>2</sup>.

As a means to ensure best performance of project stakeholders, there is a need for some other persons who are suitably skilled and experienced at construction site engagement and management, to be appointed alongside the project manager as well as the ability to work with already existing sub-contractors on ground<sup>9</sup>. By so doing, better coordination can be maintained to include cost effectiveness, considering that the construction phase bears various technicalities. This will also help as regards understanding and familiarizing with existing project construction guidelines, specifications and methods to be undertaken. This can equally guard against time constraint in the housing project life cycle. Another major source of challenge to housing projects is that construction work is not usually carried out in accordance with the plans and specifications developed during the design phase<sup>2</sup>. Corrupt practices in the construction phase of a housing project life cycle presents a performance challenge which when created usually influences housing projects negatively<sup>22</sup>.

The success of a housing project can be highly influenced by the avoidance of corrupt parties and practices by construction stakeholders during the activities of the execution phase of the project life cycle. The collated housing project challenges from other literature which are detrimental to the execution phase of a housing project life cycle are: poor project supervision and control; poor workmanship; misuse of resources; wastage of materials; poor quality of materials; delay in supplies; site accidents; equipment breakdown and religious and tribal conflicts. The occurrence of these challenges will negatively affect the housing project timeframe as well as commissioning.

### **Commissioning phase and its challenges in a housing project life cycle**

This phase entails pre-commissioning and commissioning. Commissioning phase is also susceptible to challenges as well as corrections. This phase of a housing project life cycle deals with post-construction challenges and commences once the construction phase is completed<sup>25</sup>. The nature of the findings during pre-commissioning will enable the housing project commissioning. This phase can also act as the correction phase whereby faults which are certainly noticed in other phases are amended. The essence of the commissioning phase in construction is to ensure that other phases of a construction life cycle are effectively coordinated, but this is often taken for granted<sup>11</sup>. Further to this, to avoid complications, a commissioning team should be designated to test building components with a view to determine how practically operational they are which may be overlooked. There is need for the pre-commissioning team to make adjustments or modifications depending on the nature of the housing project requirement, which is also often neglected<sup>25</sup>. In order to achieve project satisfaction, some areas of redress can be reverted back to the construction team for corrections.

Commissioning is a process for validation of construction project facilities and systems in coordination with operations personnel and third parties<sup>13</sup>. The essence of embarking on a housing project is to ensure that intending users get familiarised with the facilities thereon and in the most satisfactory manner. Any attempt to reduce the standards already anticipated in any of these phases can immensely affect the housing project outcome. The phases should also be followed serially one after the other in order to correct challenges noticed as a way of advancing housing projects. In line with trying to understand the rudiments of project aim and objectives, the phases of a housing project life cycle give an overview of the responsibilities, expectations and challenges in managing housing projects<sup>17</sup>. With the continuously occurring challenges, the shortcomings of mitigating strategies and the impending effects on housing projects, the need for proper sensitization of project stakeholders on the ranking of these challenges in housing projects in Abuja, Nigeria becomes necessary. This will serve as an information tool in determining challenges to most avoid in planning projects. The collated commissioning phase challenges from other literature are: inability to set up a closing team; poor progress evaluation; failure to keep pace with project phases; inconsistent project funding; poor management; misuse of time; poor communication and delay in project hand-over.

### **III. Methodology**

This research evaluated the challenges which affect the housing project along each life cycle phase with the aim of determining the most severe, which can ensure that construction participants are weary of the most sensitive of the challenges in the course of advancing their housing projects. A total of 65 challenges were collated from past literature relating to housing projects. These challenges were grouped under the five phases of the project life cycle namely: Initiation, Planning; Design; Execution and commissioning. The Null hypotheses of the study was formulated as:

“There is no significant variation in the perception of stakeholders on the challenges affecting the management of housing project life cycle in Abuja”.

Opinion of professional respondents in the built industry in Abuja was sampled with the use of a questionnaire and grouped into four, namely: contractors, consultants, clients and government so as to determine the severity of challenges by way of ranking. The table 1 presents the analysed data indicating the various challenges, their respective mean scores, ranks and Kruskal Wallis Values all arranged along the five-housing project life cycle phases. Kruskal Wallis Values less than 0.05 indicates a significant variation, while those less than 0.05 indicates insignificant variation.

In selecting the required sample for the administration of the designed questionnaire, the protocol was first subjected to a pilot test so as to determine validity and reliability in addressing the study objectives. This study employed the multi-stage technique which required that construction professionals were first identified before those with relative knowledge on challenges and its effect on housing projects along the life cycle phases were selected from the pool. The choice of sampling technique adopted was guided by the need to target the best possible respondents who would adequately provide the needed information on housing project challenges experienced over time and the responsible practices adopted by firms to prevent these challenges.

The study adopted the quantitative research approach. The methods of data collection were: Questionnaires for primary data and observation of project documents which carried information on project challenges faced, for secondary data. Methods of data analysis adopted was descriptive which included Mean rating and Kruskal Wallis test. A formula has been developed and continuously adopted for the determination of sample size from an unknown population<sup>19</sup>. The sample size of the study was 138 respondents as determined by the aforementioned formula, however, in all, 41 were considered invalid due to the inability of respondents to correctly supply the needed information to advance the analysis hence, 97 were adequately completed and used for the study:

- Where:  $n$  = Sample size
- $e$  = Acceptable margin of error
- $Z$  = Confidence level obtained from the Z score
- $p$  = Probability of success (number expected to be returned)
- $q$  = 1-p Probability of failure (expected number of un-retrieved instrument)

For this study, the following parameters were used at confidence level of 95%

- $p = 0.9$
- $q = 1-0.9 = 0.1$
- $z = 1.96$ , for confidence level of 95%
- $e = 5\%$

This implies that:

Out of the 138 administered, 97 questionnaires (87%) were proper to be used for analysis.

#### IV. Data Analysis

The table below presents the analysed data indicating the various housing project challenges grouped into the five life cycle phases, their respective mean scores, ranks and Kruskal Wallis sign P Values. Kruskal Wallis sign P Values less than 0.05 indicates a significant variation in the opinion of the grouped shareholders and stakeholders, while those less than 0.05 indicates insignificant variation.

**Table no 1: Challenges Affecting the Management of Housing Project Life Cycle**

Challenges	Mean Score	Rank	Kruskal Wallis Value
<b>Initiation Phase</b>			
Faulty forecasting	4.87	15	0.002
Poor project fund allocation	4.88	14	0.043
Poor project budgeting	4.85	18	0.004
Lack of feasibility study	4.95	6	0.681
Lack of viability study	4.95	6	0.681
Failure to define project	4.71	25	0.000
Inadequate amenities	4.83	21	0.000
Poor infrastructure	4.67	26	0.001
Weak project initiatives	4.67	26	0.000
Poor housing project sensitisation	4.60	28	0.003
Inability to pay contractors	4.42	38	0.004

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Low government assistance in projects	3.94	55	0.000
Lack of commitment from firm	4.98	2	0.810
Death of a housing project financier	4.95	6	0.681
Poor attitude of project stakeholders	4.00	53	0.000
Weak project policies	4.45	36	0.008
Poor resource mobilisation	4.90	12	0.542
Erratic contract negotiations	4.36	41	0.010
Unrealistic expectations from partners	4.79	23	0.000
<b>Planning Phase</b>			
Late site delivery to firm	4.02	51	0.149
Poor project funding	4.87	15	0.000
Faulty documentation of contract papers	4.95	6	0.681
Task collision in projects	3.67	59	0.042
Poor organisational framework	4.48	33	0.018
Poor scheduling	4.09	49	0.000
Poor planning	4.02	51	0.022
Poor site allocation	3.97	54	0.017
Poor resource distribution	4.43	37	0.000
Diversion of project funds	4.87	15	0.000
Land acquisition issues	5.00	1	1.000
Delay in C of O issuance	3.29	64	0.162
Delay in approval of plans	3.33	63	0.181
Poor loan arrangement	3.29	64	0.018
Poor project infrastructure and Layout	4.09	49	0.057
Poor choice of contractors	4.79	23	0.000
Use of inferior building materials	4.96	5	0.730
Poor devolution of responsibilities	4.51	31	0.000
Inability to create enabling environment	4.36	41	0.000
Inflated contract quotes	4.46	34	0.006
<b>Design Phase</b>			
Delay in design approval	3.56	61	0.004
Faulty design	4.98	2	0.810
Uneconomic design	4.58	29	0.061
Late design delivery	4.41	39	0.000
Poor design interpretation	4.31	43	0.000
Delay in correcting design changes	4.49	32	0.000
Design Change during project	4.81	22	0.000
Unachievable designs	4.13	47	0.029
Improper design interpretation	4.10	48	0.021
<b>Execution Phase</b>			
Poor project supervision and control	4.98	2	0.730
Poor workmanship	4.57	30	0.000
Misuse of resources	4.93	10	0.009
Wastage of materials	4.89	13	0.013
Poor quality of materials supplied	4.92	11	0.087
Delay in supplies	3.78	57	0.023
Site accidents	4.28	45	0.011
Equipment breakdown	3.74	58	0.021
Religious and tribal conflicts	3.84	56	0.013
<b>Commissioning Phase</b>			
Poor progress evaluation	4.46	34	0.000
Failure to keep pace with project phases	4.31	43	0.000
Inconsistent project funding	4.85	18	0.005
Poor management	4.38	40	0.014
Misuse of time	3.58	60	0.000
Poor communication	3.56	61	0.004
Delay in housing project site hand-over	4.19	46	0.001
Inability to set up closing inspection team	4.84	20	0.023

Source: Field Work (2020).

### V. Findings

In order to determine the challenges that occur within the life cycle of housing projects, opinions were sampled and the result is presented in table 1 above. As earlier stated, the Kruskal Wallis test indicates if there is a significant difference between groups, or not. The Kruskal Wallis values for the respective challenges were obtained which was used to determine whether there were significant variations in the opinions of the respondents. From the overall mean scores, Land acquisition issues was ranked 1<sup>st</sup> (5.00), Lack of commitment from firm (4.98) came 2<sup>nd</sup>, Faulty design (4.98) was ranked 3<sup>rd</sup>, Poor supervision and control (4.98) came 4<sup>th</sup>, while Use of inferior building materials ranked 5<sup>th</sup>. This indicated that the major challenges to management of

housing projects in Abuja borders on land related issues, project design and supervision. The least ranked challenges from collated data from respondents in ascending order include: Delay in Certificate of Occupancy issuance (3.29); Poor loan arrangement (3.29); Delay in approval of plans (3.33); Poor communication (3.56) and Delay in design approval (3.56) respectively.

In attempt to determine whether there were significant variations in the submissions of the respondents, the respective Kruskal Wallis p. values of these challenges were examined. Land acquisition challenges was ranked 1<sup>st</sup> by contractors, consultants, government officials and clients. The corresponding Kruskal Wallis sig. P value was 1.000 which is more than 0.05 indicating that there is no variation in the opinion of respondents. Similarly, Lack of commitment from firm and Faulty design were ranked 1<sup>st</sup> by contractors, consultants and Clients, while government officials ranked them 7<sup>th</sup> and both had corresponding sig. P values of 0.810 indicating an insignificant variation in respondents' opinion. Poor project supervision and control and Use of inferior building materials were both ranked 1<sup>st</sup> by contractors, consultants and clients while government officials ranked them 11<sup>th</sup> and they both had sig. P values of 0.730 respectively indicating an insignificant variation in respondents' opinion.

In regards to hypotheses testing, considering that all 5 Kruskal Wallis sig. P values were more than 0.05, the null hypothesis which states that there is no significant variation in the perception of stakeholders on challenges affecting the management of housing project life cycle in Abuja, was thereby accepted.

The above listed findings which have been found to be most detrimental to housing projects in Abuja, Nigeria can be said to be partially consistent with some other studies considering that either one or all of the above listed challenges have appeared in previous aforementioned studies. For instance, the following challenges were listed by past researchers as being most detrimental to housing projects: failure to properly define project, weak project policies, poor project fund allocation, inconsistent project funding, poor site allocation, unachievable designs, material wastage and site accidents<sup>22</sup>. Setbacks such as lack of or improper feasibility and viability studies, poor choice of contractors, issues with land acquisition, delay in supplies, mismanagement of resources, equipment breakdown, poor site allocation, poor management and communication were found to be key challenges in housing projects<sup>20</sup>. Furthermore, the following were highlighted as challenges affecting housing projects: poor project evaluation, poor budgeting, inflated contracts and inadequate amenities<sup>7</sup>, while poor scheduling, delay in approvals, design change during execution, various man-made conflicts and poor planning were considered challenges in housing projects<sup>6</sup>. Un-economic design, land related issues, poor project funding, weak project initiatives, diversion of project funds, poor organisational framework, poor attitude of project stakeholders, faulty forecasting and poor use of labour<sup>15</sup>.

Challenges affecting housing projects tend to differ from one location to another based on peculiarities which may be as a result of: cultural differences, technological advancement, religious sentiments, political affiliations, economic performance and developmental pace. A known fact that cuts across climes regardless of location is that challenges actually do exist, with the capability of affecting housing projects, hence the need to make effective and efficient steps towards preventing and addressing them.

### **Effect of challenges on housing projects**

A major fact that cut across the respondents was that challenges truly affect people and process in the execution of housing projects. Challenges have affected housing projects in a multitude of ways some of which are man-made or natural. In many housing project sites, there are often accessibility issues as there are no clear and defined routes to access these lands. This creates a major challenge for developers as movement of materials, labour and plant and machinery becomes difficult. In cases where the developers chose to construct access roads, they had to part with lots of funds for construction. The possibility of sale of land to multiple developers as a result of dubious and fraudulent practices is also common in the Abuja setting. Registration, titling and approval of these landed property are important and a housing development is hinged on this process however, in Abuja, delays persist in registration, titling and approvals due to corruption or bureaucracy as bribes are most times demanded which tends to affect the project process leading to time and cost overruns.

Prospective developers have often failed to investigate and establish proper ownership of land to be used for housing development. Issues have mostly arisen when land belonging to family is fraudulently sold by a family member. Opposed to its sale, other family members often seek litigation. Proper investigations and documentations need to be carried out prior to purchase. Some lands available for projects also tend to be tied to one form of litigation or the other. Purchase of such lands has automatically plunged intending developers into a lengthy litigation process. Furthermore, a number of intending developers in Abuja have lost their lives during the course of land litigation, thereby ending housing projects instantly, hence the array of uncompleted housing projects existent in the FCT. Cases also arose as to the practice of purchasing land and afterwards, noticing that what is on the landed documents is totally different from what is on ground.

As core decision makers, in order to effectively advance housing projects, commitment levels from the owners of the firms were elevated through job efficiency and improved profitability. Ways through which the



lack of commitment from firms into housing projects manifests are either by the inability to make informed decisions in time, bad planning, taking wrong decisions and not efficiently engaging at the right time. Regular meetings are seldom initiated or encouraged, where opinions on ways to improve processes will be sampled. Inadequate investigations are often also made before core project decisions are taken and are many times poorly done, which tends to hamper the development process. Projects shareholders many times show little or no interest and pay little or no attention to stakeholder needs. To avoid the over-burden of clients, designs need to be done in a reflective manner to accommodate available funds, taste, use and projected time of completion in housing projects. Faulty designs only translate into housing project either not being completed, or will be faulty for use at completion. Faulty designs only translate into housing project either not being completed, or will be faulty for use at completion. Many design teams have not been open to advise and guide from clients and other interested and more experienced professionals, so as to achieve economical and achievable designs. It was also observed that many times, designs were improperly scrutinized to ensure that they stand the test of time.

In a project setting, the need to engage the services of qualified and credible managers to run housing projects which may not be keenly done cannot be over-emphasised. Furthermore, inadequate supervisors have often been engaged which limits coverage in projects. This translates into workers having to get away with dubious intentions and practices either at office or on site. Another way through which poor supervision and control manifests in housing projects is through poor decision making. Investigations further revealed that firms often have unsatisfactory criteria for selecting workers. This exposes projects to the wrong choice and calibre of workers to advance the development process. Project managers may often exhibit bias and favouritism in a project setting which always affects motivation amongst stakeholders. Poor supervision and control also manifests through irregular or lack of inspection of supplies and materials, with an adverse effect on project outcome. Improper reporting and record keeping was found to undermine housing projects as it represents a catalyst for fraudulent practices. Standards were found to be set and maintained all through the project life cycle which ensured that cases of compromise were averted or reduced to the barest minimum. The urge to shadily cut costs to ensure personal gains often leads to demand and supply of inferior building materials. Furthermore, the quest to demand and supply inferior building materials can strongly be driven by the need to divert housing project funds for selfish purposes.

## **VI. Conclusion**

As challenges cause housing inadequacy, the study evaluated the challenges which affect housing projects in Abuja across the five life cycle phases and afterwards ranked the challenges, with the intention of identifying the criticality of these challenges. The following challenges ranked first to fifth respectively: Land acquisition issues; Lack of commitment from firm; Faulty design; Poor supervision and control and Use of inferior building materials. Land acquisition issues remain a major challenge to housing project which manifests in housing shortage. A housing estate rests on land therefore the adequate investigation and approvals need to be done which is many times taken for granted. This can help to avert litigation as well project abandonment which is the case in many projects in Abuja. Lack of commitment from construction firms greatly affects projects as some of the key decisions usually taken to advance projects are the sole responsibility of the shareholders and are often taken wrongly which has resulted in cost and time overruns.

Design related challenges are also quite expensive to correct hence the need to articulate decisions during design. Many times, designs are extremely ambiguous, expensive and unachievable. Designs need to be done in line with availability of project funds to enable completion and usability which has not been the case. Supervision and control in the life cycle phases of a housing project is pivotal to project completion. Vital decisions must be taken by responsible individuals. A housing project is naturally capital intensive therefore the people tasked with the responsibility of taking decisions to advance the project must be highly experienced and reflective towards the project goals. The nature of building materials determines the quality of the housing project. Project stakeholders have many times used sub-standard building materials which has had adverse effects on the project such as building collapse of the inability of buildings to meet their statutory purpose by end-users. In the overall, housing project challenges need to be addressed to ensure project maximization and satisfaction by shareholders and stakeholders.

## **VII. Recommendations**

In line with the findings of the study, the following recommendations were put forward towards ensuring an enhanced housing project delivery process by addressing inherent project challenges: Land must be properly investigated prior to purchase to ensure that it is free from any encumbrance. It must also be fit for the purpose such that every resource committed to the project delivery will yield the required outcome; Firms shareholders and leaders need to be committed to the housing project process. This can be achieved by ensuring that the right resources are provided in time. Furthermore, stakeholder interests need to be protected as both

primary and secondary stakeholders represent the catalyst needed to advance the housing project. In addition, wages need to be paid promptly and reviewed periodically, suppliers need to be settled as at when due.

It is advisable to ensure that the services of the best professionals are engaged in a housing project. Being a capital-intensive investment, additional measures must be put in place to ensure that masters of the various construction fields of endeavor, are engaged. A team or consortium of professionals can be formed to guarantee project success. Criteria for employing can be on the basis of academic qualification, nature of past projects handled, years of experience, number of past projects handled, leadership capacity and behavioral character and past records. It is mandatory to make use of the best quality of building materials to ensure project sustainability. The quality of materials used is directly proportional to the strength and lifespan of the housing project as well as the completed estate.

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