

**The Role and Need to Engage Young Quantity Surveyors as Construction Economics
Experts as we build back together.**

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Keywords; Access to land; Affordable housing; Capacity building; Implementation of plans

SUMMARY

Cost is a major factor that affects the goals of actualizing affordable housing to meet up for its demand. In other to meet the goals of affordable housing and infrastructure we need better value for money and also, we need to plan for developmental projects that would be of economic value and benefits throughout the project life-cycle. This is the only way we can be assured of affordable housing for all especially after the current global disasters. Cost control is not only limited to construction cost or present cost of acquiring a developmental project but futuristic cost that is cost benefits that can be achieved throughout a project's lifecycle. This brings up the need for professionals to be involved in the development planning stages of project. If we take the steps to ascertain that all developmental projects have lifetime economic value when invested into through efficient cost planning, a lot will be achieved in land management and implementation of plans for development within a short period.

The research work takes a look at cost control as the reason why we must engage quantity surveyors as construction economic experts during project development planning. It emphasizes on the use of the right techniques as well as the right professionals who are specially trained with professional tools that would significantly help to achieve projects that yields not just present but future benefits. As we build back together, we would enjoy the benefits of using the right tools and engaging the right professionals. This research aims at studying these tools and an enquiry on the level of engagement of young Qs who are trained to utilize them. The research design adopted was a descriptive survey study in an attempt to explain the factors that affect effective planning and implementation of affordable housing and

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land development, the expertise of the young Quantity Surveyor that emphasizes the need for his involvement in the process, the Significant Contributions of the young Quantity Surveyors and their Level of involvement in the development planning process. Descriptive survey study was used because it was best suited to answer the ‘what’ research questions in the study.

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1.0 INTRODUCTION

Land has been used for various purposes. One of the basic uses of land is for the provision of shelter. Housing and other infrastructure are provided on land. The economic impact of climate change and the covid 19 pandemic has led to a lot of losses as businesses shut down, jobs as well as affordable housing and infrastructure were lost within this period. In order to overcome these challenges there has been a need to embark on recovery paths to meet up with the global SDG goals. Land needs to be developed to provide affordable housing and other infrastructure. Ayodele (2004), and Adebayo (2006) describe a sustainable socio-economic development as a situation where the following attributes do not decrease over time; real income; improved healthcare and nutritional status; educational achievement; access to good infrastructures; fair income; distribution and increase in basic freedom. As we build back together, one of the major factors that affects actualization of the goals of affordable housing and infrastructural development is cost. Cost needs to be properly planned during the development planning stages to ensure that value for money and economic benefits from various projects investment are derived. It is also important to assess how projects could be completed on time, quality and budget and we need the involvement of professionals to accomplish these goals.

The young Quantity surveyor has been exposed to new realities. Their roles as cost managers extends towards futuristic cost analyses and management. They are development planners and

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their roles as planners goes beyond managing and controlling construction projects, it is also futuristic. Development planning involves cost control. Cost control can be applied to making investment decisions based on life cycle costing that is in terms of future cost and the time value of money. Quantity surveyors have developed sophisticated skills, models and techniques, which have been applied in construction procurement in diverse projects. Refining the services of quantity surveyors to play an effective and pro-active role throughout the development cycle of project, is therefore very important. (Citing Brummer, 2004). This study is designed to obtain the relevant factors that affect effective planning and implementation of affordable housing and land development. And to know the roles and involvement of the young Quantity Surveyors in development planning as we build back together.

2.0 LITERATURE REVIEW

2.1 DEVELOPMENT COST AND INVESTMENT PLANNING CHALLENGES IN OUR WORLD

There has been a lot of changes in our world, ushering us into a new reality. However, the goal of a more sustainable future has not changed. One of the ways to face this new reality is in the proper management of resources. There has always been a growing and continuous demand for development of land. This development cuts across all sectors but basically the construction industry. A growing construction industry yields increased fiscal resources to the government and influences trend of technology absorption and development (Bakar, 2009). Successful construction sector experiences has been encountered in countries such as the United States(U.S), Brazil, and China. In the U.S., for example, the companies charged with designing,

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building, maintaining, and managing the transportation infrastructure, including their supplies, generated an output value of over US\$120 billion in 2010, exceeding that of; auto-repair & maintenance (\$116.8 billion), aircraft manufacturing (\$82.4 billion) and coal mining (\$29.8 billion) (Transportation Development Foundation - ARTBA, 2010).

It is a known fact that the construction industry has the potential for spurring a rapid and broad-based growth for developing nations despite the present challenges of covid 19 and global disasters. Although, the potential of the construction industry for fostering structural transformation and economic development is attainable, this sector has been plagued by cost management barriers. International experiences in the construction sector have not always been successful, as the World Bank documents. In most developing countries the construction industry has failed to provide the prerequisite for development and safeguarding better living conditions. Barriers to the sector's performance remain widespread, decreasing the chance to transform the construction industry into 'the engine of growth' (World bank, 2004) The combined effects of these reported problems are increased uncertainties and risk when embarking on construction projects.

Failures in this sector also can be traced to Less involvement of efficient planners, Low emphasis on the concept of value for money during cost planning. Lack of proper adherence to cost estimates and cost plan. Kirun & Varghese, (2015) and sanmi & Hashim, (2013) identified challenges which include unstable market condition, choice of procurement method, non-clarity of exclusions, improper planning and schedule, reworks due to errors, lack of research and innovation, price and design risk. It is quite debatable that barriers of controlling construction cost could be considered as challenges of cost control practices. The antecedents of these challenges are to a large extent, the results of attitude of management and the people in whose hands cost control practices lay.

Reliability is an important factor in the management, planning and design of any engineering or construction product that needs to be addressed. Today, the global economy are not based only on initial purchasing cost but on their total life cycle cost (Dhillon, B. S ?Design Reliability crc press2000). Projects life cycle cost management is a necessity.

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2.2 ENGAGING YOUNG QUANTITY SURVEYING PROFESSIONALS TO COMBAT DEVELOPMENT COST AND INVESTMENT PLANNING CHALLENGES IN OUR WORLD

The Young Quantity Surveyor has a role to play as a financial adviser for the construction industry. They play a large role as the link with the future and they play a role in adapting to the new reality. They need to be more involved in the development planning stage. As an economist, the Quantity Surveyor will need to develop understandings and techniques of all kind that will deal, not just with the items that go into the accounting of a particular project, but with the forces, economic that determines the implementation of the project and its life cycle costing. To achieve this there is a need to carry out cost control in terms of investment appraisals and project viability studies. Also, projects should be carried out at the desired cost, quality and time through proper cost planning and budgeting. A budget can be considered as a document, or a quantitative expression of a plan of action which aids the coordination and implementation of the plan (National Minority AIDS Council, 2009).

Reliability as well is an important factor. Procurement of infrastructural products are not only based on their initial purchasing costs, but on their total lifecycle cost (Dhillon, B. S ?Design Reliability CRC press2000). In order to perform an effective life cycle cost analysis and management specialist needs to be engaged. One of the principal duties of the Quantity Surveyor is the preparation of Bill of Quantities which is a vital tool for management of construction projects. Priced Bill of Quantities provides good basis for preparation of cost analyses for use in cost planning or preliminary cost estimate for future projects. The Quantity surveyor can as well look into cost implications on the purchase of land for housing, feasibility studies for to ensure that the location and plan of a project would bring future benefits over a period of time. Cost control can serve as a key to making wise investment decisions. It involves feasibility studies and cost-benefit analysis to ascertain the future value of carrying out a project. What benefits would an investor derive in the future from a present investment. Quantity surveying professionals use life cycle cost management techniques to carry out their

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evaluations and make the right decisions concerning a project. They are needed as active participants during the benefit-to-cost analysis of project selection. It is highly unlikely that client will approve a project where the costs exceed the benefits. Benefits can be measured in either financial or nonfinancial terms. The process of identifying the financial benefits is called capital budgeting, which may be defined as the decision-making process by which organizations evaluate projects that include the purchase of major fixed assets such as buildings, machinery, and equipment. Professional when involved would engage in life cycle cost management and cost control. What we need most at the moment is the planning of projects with the future cost and benefits in view using professional tools and skills of the Quantity Surveyor

2.3 EVALUATING THE FUTURE VALUE OF A PROJECT INVESTMENT DURING DEVELOPMENT PLANNING

Cost planning and management goes beyond managing and controlling construction projects, it is also futuristic. Cost control can be applied to making investment decisions based on life cycle costing that is in terms of future cost and the time value of money.

2.3.1 TOOLS TO ASCERTAIN THE FUTURE VALUE OF A PROJECT INVESTMENTS.

Some useful tools for cost control used by professionals include.

LIFE CYCLE COST TECHNIQUES

Life cycle cost management is concerned with the time-stream of costs and benefits that flow throughout the life of a project, with future costs and benefits converted to present values by the use of discounting techniques and in this way the economic worth of an option can be assessed. It determines the total expenditure of a project by measuring and analyzing the construction, maintenance and operational elements of an asset during the asset's through life (Dell' Isola and Kirk, 2003). Essentially, the main task in carrying out a Life cycle cost study is to prepare a cash flow schedule for the project including all the different user costs as they

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occur throughout the project life cycle. Every building project involves streams of payments over a long period of time (usually the life of the building). The payments are of three main types:

- (1) present payments covering the acquisition of the building site, erection of the building and professional fees;
- (2) annual payments relating to minor repairs, cleaning, heating, lighting, rents and the like; and
- (3) periodic payments such as external painting at five-year intervals and replacement of services or other components.

All these varying types of payments have to be converted to a common method of expression to permit a meaningful comparison to be made between alternative designs. The process is often referred to as discounting future costs and is based on the premise that if the money were not spent on the project in question, it could be invested elsewhere and would be earning interest. We are often concerned with annual payments throughout the life of a building, which is commonly taken as sixty years.

Investment appraisal, which is a part of the business case, will, if properly structured, improve the decision-making process regarding the desirability or viability of the project. It should examine all the realistic options before making a firm recommendation for the proposed case. The investment appraisal must also include a cost/benefit analysis and take into account all the relevant factors such as:

- a) Capital costs, operating costs and overhead costs
- b) Support and training costs
- c) Dismantling and disposal costs
- d) Expected residual value (if any)
- e) Any cost savings that the project will bring
- f) Any benefits that cannot be expressed in monetary terms

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To enable the comparison to be made of some of the options, the payback, return on capital, net present value (NPV) and anticipated profit must be calculated. In other words, the project viability must be established.

FEASIBILITY STUDIES

All projects simply begin as an idea. An “idea” is a rough notion in our head about something we like or want to do. As an idea is developed, it goes through a fine-tuning process which results in a final form known as a “concept”. Many concepts will never be developed, while some will. A feasibility study is an important technique which helps to decide which concepts should be developed as a project. As stated by Katharine Bause (2014) decided that the feasibility study definition in economic logic are examinations that try to find whether a development of project is a cost-effective and feasible for a client to continue the proposed development or not

Feasibility studies in the construction sector are preliminary studies undertaken at the very early stage of a project. Construction projects require huge investment, in both time and money, and for this reason it is important to establish if the project will be feasible at a very early stage.

The purpose of a feasibility study is to;

- Establish if the project is viable.
- Identify numerous feasible options.
- Assist in the development of business cases and project execution plans.

A detailed feasibility study can take time in accordance with the size of the project. It will let the client know if the project is viable, needs to be adjusted or is unlikely to succeed. We assess the project feasibility in five specific areas:

- **Technical Feasibility**

In this area, the Quantity Surveyor will study the whole project from a technical aspect. He will use his knowledge to decide if the proposed project is technically possible. This will involve

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considering the size of the site, access, land topography, geotechnical information, existing buildings on the site, flooding risks and other environmental factors associated with the site.

- **Economic Feasibility**

This is where a cost benefit analysis is carried out. In this step we determine if the project is economically viable. Based on experience and current market trends, we will analyze various options and advise on what type of project or scheme is best suited to the site.

- **Operational Feasibility**

This stage assesses how well the proposed project solves problems and meets goals. Whether it is a new school, hospital, housing development or road, every construction project is and should be an answer to a problem. The operational feasibility takes a bigger picture view of the outcomes of the project to ensure that when completed as planned and budgeted, that the identified problems and goals are achievable.

- **Scheduling Feasibility**

This assessment is arguably the most important for project success. A project will fail if not completed on time. In scheduling feasibility, the Quantity Surveyor estimates how much time the project will take to complete. It is beneficial to analyze the design, materials, budgets, environmental impacts, regulations, and risk areas. It is also important to assess the ability of the team to succeed in completing the construction project on-time and on-budget

If the consensus is that the project is feasible based on these five assessments, it will be time to move on to the next step in the planning phase of the project.

COST/BENEFIT ANALYSIS

Once the cost of the project has been determined, an analysis has to be carried out which compares these costs with the perceived benefits. The first cost/benefit analysis should be carried out as part of the business case investment appraisal, but in practice such an analysis

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should really be undertaken at the end of every phase of the life cycle to ensure that the project is still viable. The phase interfaces give management the opportunity to proceed with or, alternatively, abort the project if there is an unacceptable escalation in costs or a diminution of the benefits due to changes in market conditions, such as a reduction in demand caused by political, economic, climatic, demographic or a host of other reasons.

Both costs and benefits are spread over long periods of time involving difficult future predictions and discounting techniques, some costs and benefits also are indirect and are not easily costed and some intangible benefits become a matter of opinion. In all construction projects, a balance between cost and value must be established. The financial appraisal of the project can either be assessed by calculating the value of the end product and working out the project cost with an eye to value (Code of practice for project management for construction and development, 2010).

2.3.2 SIGNIFICANT CONTRIBUTIONS OF THESE TOOLS IN DEVELOPMENT PLANNING.

According to Kibert et al. (2002), sustainable construction considers all the life cycle stages of the built environment: planning, design, construction, operation and deconstruction/demolition. The best choice in terms of initial investment costs may not be the best choice when a life cycle cost analysis is performed. Therefore, if cost is analyzed with these tools in terms of investment cost, development sustainability will be achieved. Also, with life cycle cost benefits, projects will be achieved on time and to cost, the overall planning process will be faster and more efficient, reduction in abandoned projects.

3.0 RESEARCH METHODOLOGY

The research design adopted was a descriptive survey study in an attempt to explain the factors that affect effective development plan and implementation, the Significant Contributions of the Quantity Surveyors tools in the development planning process and the Level of involvement of young Quantity Surveyors in the process. Descriptive survey study was used because it was best suited to answer the ‘what’ research questions in the study. This study is designed to obtain the

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relevant factors that affect development planning and implementation and to know the level of involvement of young Quantity Surveyors.

3.2 Research Sampling Technique

3.2.1 Population/Sample Population

The target population (N) for the research work is Quantity surveying professionals and other development professionals who are involved in development planning in Nigeria. The sample frame is professionals based in Rivers state. A sample size of thirty (30) professionals is chosen to administer questionnaires. This is because the total number of professionals cannot be ascertained.

3.3 Data Collection

In sourcing data for this research work, both primary and secondary sources were used. Hayatu (2008) citing Thirkettle (1972), described data collected through primary sources as data expressly collected for specific purpose. He further stated the advantage of primary sources of data as exact information required is obtained.

3.4 Data Collection Strategy

The nature of this research work prompted the use of close ended structured questionnaire, which was used to obtain quantitative data from the respondents. The questionnaire was also designed to seek the opinion of the respondents. A total of Thirty (30) questionnaires were distributed.

3.5 Data Analysis

The research work adopted statistical measures for analyzing the data which employs the presentation and analysis. While descriptive form of statistical tools such as the weighted mean was employed.

4.0 FINDINGS AND DISCUSSIONS

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Following the administration and subsequent collection of responses the following are the results and interpretation. In Table 4.1 that follows, the administration of questionnaire and response rate calculated are shown.

Table 4.1: Administration of Questionnaire

Variable	Number of respondents	Percentage %
Questionnaires returned	28	93
Questionnaire not returned	2	7
Total	30	100

As indicated above 30 questionnaires were administered to the various respondents, 28 questionnaires were duly answered and returned. A total of 2 questionnaires, were not returned. The total responses yielded the response rate of 93%. The entire respondents were residents of Port Harcourt metropolis.

Table 4.2 Academic Qualifications

Qualification	HND & B.Sc	M.Sc	MBA	Ph.D	Others
Frequency	10	5	4	4	5
Percentage	35.71	17.85	14.28	14.28	17.85

Key: HND = Higher National Diploma, B.Sc = Bachelor of Science, M.Sc = Master of Science, MBA = Master of Business Administration, Ph.D = Doctor of Philosophy

Table 4.2 shows that about 36% of the respondents have a minimum of B.Sc degree in courses related to the Development planning. This indicates that the result was gotten from professionals involved in development planning process.

Table 4.3: Categories of Professional

Professional Category	Frequency	Percentage
Quantity surveyors	19	67.86
Development planning professionals	9	32.14
Total	28	100

As indicated above, the majority of the respondents are Quantity Surveyors'. They constitute 68% and the Development planning professionals constitute 32% of the total study population. This indicates that more of the respondents are Quantity Surveyors involved in development planning.

In the analysis that follows, average ranking or weighting of each identified factors are assigned value in order of ranking.

Table 4.4: Factors affecting development cost and investment in our world today

Factors	5	4	3	2	1	F	F _x	Score	Rank
Less involvement of efficient planners	15	5	5	5	3	28	123	4.39	1
Low emphases on the concept of value for money during cost planning.	15	5	5	2	1	28	115	4.10	2
Lack of proper adherence to cost estimates and cost plan.	15	6	3	4	5	28	112	4.00	3

Grand Mean = 4.06

From Table 4.5 above, all the identified factors affecting effective development planning and implementation are significant. Less involvement of efficient planners is ranked 1st; Low emphases on the concept of value for money during planning ranked 2nd Lack of proper adherence to cost estimates and cost plan ranked 3rd; with corresponding mean scores of 4.39, 4.10, and 3.75 respectively.

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Table 4.5: The Significant Contributions of the Quantity Surveyors tools in development planning.

Factors	5	4	3	2	1	F	Fx	Score	Rank
Project life cycle benefits	15	7	5	5	1	28	129	4.60	1
Projects will be achieved on Time and to cost	15	6	6	1	-	28	118	4.21	4
The overall planning process will be faster and More efficient	17	6	3	1	-	28	120	4.28	3
Reduction in abandoned projects.	20	5	1	1	-	28	126	4.50	2

Grand Mean = 4.34

From Table 4.3 above, all the identified contributions that can be made by the quantity surveyor are significant. Project life cycle benefits is ranked 1st; reduction in abandoned projects ranked 2nd; the overall Budget process will be faster and More efficient ranked 3rd; with corresponding mean scores of 4.60, 4.50, and 4.28 respectively.

Table 4.6: Level of Involvement of the Quantity Surveyors in development planning

Factors	5	4	3	2	1	F	Fx	Score	Rank
A.Construction projects	15	9	2	1	1	28	122	4.35	1
B.Infrastructure project.	16	5	5	1	1	28	118	4.21	2
C.Developmental planning	10	5	5	1	7	28	94	3.35	3

Grand Mean = 3.97

Construction projects, Infrastructural project and Developmental planning are the significant areas identified by the study: The involvement of the Quantity surveyors' in Construction projects is ranked 1st with a mean score of 4.35. Infrastructural project ranked 2nd with a mean

score of 4.21. The Quantity Surveyors' involvement in Developmental planning ranked 3rd, with a mean score of 3.35. It therefore reveals that the quantity surveyors are engaged in Construction projects while it also shows that quantity surveyors are involved less frequently in Developmental planning. The Quantity surveyor should be engaged in these areas.

5.0 CONCLUSION AND RECOMMENDATIONS

This study has made an attempt to explain development cost and investment challenges in our world. It also identified the contributions the Quantity Surveyor has to make. The Quantity Surveyor has a big role to play because development planning process requires expertise whose training can ensure effective planning and proper implementations of plans. To achieve a project that yields future benefits it is highly recommended that the right techniques and professionals are involved in development planning. This would improve the planning and implementation process and consequently life cycle cost benefits would be derived from project investments. The goals of achieving affordable housing and infrastructure for all can be actualized when Quantity surveyors are involved more in Developmental planning. I would recommend that the Quantity surveyor should be engaged in all areas of development planning of construction projects.

References

Adebayo, M.O.; Quantity Surveying And Nation Building For Sustainable Economy. *Journal of Sciences, Engineering and Environmental Technology*, Maiden Edition, 2006; pp. 128-130.

Ayodele, A.S.; Nigeria And The Crisis of Economic Development. A Paper delivered at the 21st Biennial Conference of Nigerian Institute of Quality Surveyors, Mokola, Ibadan, Nigeria. 2004

Code of practice for project management for construction and development /the Chartered Institute of Building, Oxford: Ames, Iowa: Blackwell, 2010, 279.p.

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Dell'Isola, A.J. and Kirk, S.J., 2003. Life cycle costing for facilities. New York: RSMMeans.

Dhillon, B. S Design Reliability. Fundamentals and Applications. London, NY, Washington, D.: CRC Press, 2000

Kibert, c. J.,e Bradley, G. (2002). ‘ Construction ecology: nature as the basis for green buildings.

Katharina Bause, Aline Radimersky, Marinette Iwanicki, Albert Albers. 2014 Feasibility studies
in the product development process. *Elsevier*, 21, 473-478

National Minority AIDS Council,(2009). Millennium Development Goals Project paper
Transportation Development Foundation - ARTBA, 2010

World Bank 2004: the *Construction Industry: Issues and Strategies in Developing countries*.
Washington DC: World Bank

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