Inclusive Growth in Innovation and Technology: The Role of Quantity Surveying Professionals in South-South Nigeria.

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Keywords; Affordable housing; Capacity building; Implementation of plans

ABSTRACT

Innovation and Technology is needed to improve infrastructure and sustainable development. The aim of the study was to Assess the role of Quantity Surveyors in actualizing Inclusive Growth in the use of Innovation and Technology for developmental projects using South-south Nigeria as a case study. Quantitative research method using questionnaires was applied as the research instrument. The study was both a theoretical and a descriptive study. The theoretical aspect involved the review of relevant literature while the descriptive aspect involved collecting and analyzing data from respondents using questionnaire and descriptive statistics respectively. A sample size of 120 respondents was drawn from a population of 150 Quantity Surveyors, Engineers and other professionals. The study highlighted that educational gaps, Socio-economic challenges, Digital infrastructure challenges, Government policies and knowledge sharing gaps are factors affecting inclusive growth in Innovation and technology in South-south Nigeria. It concluded that inclusive growth in the use of innovation and technology such as Artificial Intelligence, Quantum computing, Augmented Reality and other innovations in Construction projects is significantly low and that Quantity Surveyors and other professionals play a key role for improvement. The research recommended Building partnerships, advocacy, addressing socio-economic challenges, encouraging inclusiveness, regular training and mentorship are needed to improve inclusive growth in the use of innovation and technology in South-south Nigeria. The study also contributes to previous studies emphasizing that the use of innovation and technology in Construction projects will improve sustainable infrastructure development.

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1.0 INTRODUCTION

There is increasing demand for efficient Infrastructure development across developing countries and countries in transition. The Construction Industry plays a key role for development and in other to achieve this there is a need to embrace innovation. The use of innovative technology in construction is mostly affected by the lack of training and skills, high cost of implementation, resistance to change and so on. Inclusivity, collaboration and partnerships is a necessary aid to resolving these challenges. A study by Awodele and Ogunsemi (2010) found that collaboration is one of the cutting-edge methods for improving innovation. Quantity Surveyors and other experts in the construction industry need to advocate on inclusivity and a collective approach in resolving challenges in the industry. As financial managers, achieving the timely delivery of projects, to quality and cost using innovative techniques to avoid delays and failures is a major goal.

2.0 LITERATURE REVIEW

The body of research indicates that mitigating failures in the construction sector calls for a multimodal strategy that includes technology adoption, improved coordination, and process enhancements. This will ultimately lead to improved project outcomes. The construction industry is widely recognized as one of the leading sectors where the implementation of CE practices is essential (Damgaard et al., 2022) The success of a project can be greatly impacted by management systems. Regulatory influence by professional partnerships is particularly needed for sustainable innovation. According to research by Hojnik and Ruzzier, (2016). Hazarika and Zhang (2019) managerial commitment to environmental issues is recognized driver of sustainable innovation practices. In an era where innovation is key to embedding principles of a cleaner, safer, and circular economy into construction industry, addressing this gap is crucial. Research by Reichstein et al., (2008) highlighted the limited understanding of innovation development within the construction sector. This lack of understanding hinders policy-driven initiatives aimed at boosting innovativeness and firms' capacity for innovation in areas such as artificial Intelligence, Quantum computing, Augmented Reality and other innovations for use in the construction industry. Professionals can play a vital role in building partnerships, encouraging inclusiveness, advocacy, regular training and mentorship to support innovation.

The analysis of this study emphasizes on policymakers, practitioners, and other stakeholders to promote inclusive growth in innovation and technology that will help put obstacles behind and ensure development in the construction industry through collaboration, partnerships and inclusivity.

3.0 RESEARCH METHODOLOGY

3.1 Study Area

The study areas considered have a reasonable number of large-scale construction projects involving construction industry professionals. Questionnaires numbering over 150 were distributed across these states and regions and responses were received

3.2 Research Design

The research design adopted was a descriptive survey study in an attempt to explain inclusive growth in innovation and technology

3.3 Population

Quantity Surveyors and other pertinent stakeholders involved in infrastructure development in Nigeria make up the population for this study.

The selection formula is as follows:

$$n = \frac{N}{1+Ne^2} \qquad 1$$

Where n → the required sample size
N = is the Target Population (150 respondents)
e = accuracy level required. Standard error = 5%
Sample calculation

$$n = \frac{150}{1+150*(0.05)^2}$$

$$n = \frac{200}{1.37} \qquad = 109.09$$

n= 109
n=109 Respondents
Therefore, minimum of 109 respondents are required for this study

3.4 Sampling Size and Sampling Technique

The sampling population for this study is 150 respondents who are Quantity Surveyors/professionals and other pertinent stakeholders that are involved in infrastructure development across South-south Nigeria. The random sampling Technique was applied to select 120 respondents from a population of 150.

3.5 Data Collection

The study collected primary data using a structured questionnaire. An online survey was distributed to respondents who were randomly selected.

3.6 Data Analysis

The data collected was analyzed using descriptive Statistics in the form of simple percentages, frequency distributions and the Mean.

4.0 RESULTS AND DISCUSSION

4.1. Demographic Statistics of the Respondents

Data analysis, interpretation and discussion is presented in this section. **Sex Distribution of Respondents**

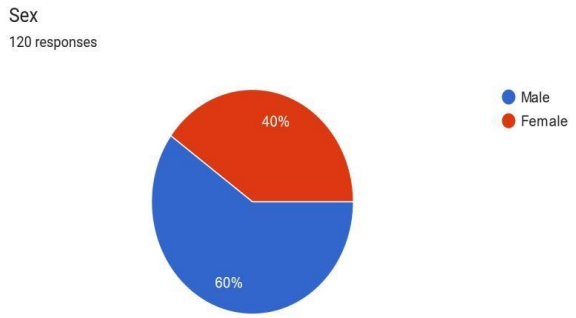


Figure I: Gender Distribution of Respondents (Authors' credit)

As indicated in the above Figure, most of the respondents are Males. They constitute 60%, Females constitute 40% of the total study population. This indicates that the result was gotten from more Males

. Years of Experience of **respondent**

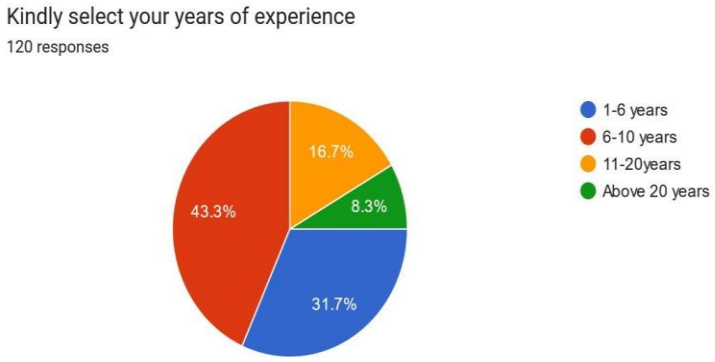


Figure 2: Years of experience of Respondents (Authors' credit)

Figure 2 As indicated in the above Figure, most of the respondents are experienced professionals of 6-10years' experience. They constitute 43.3%, Professionals of 1-6 years' experience constitutes 31.7%. Professionals of 11-20 years' experience constitutes 16.7% while professionals of above 20 years experience constitute 6.3% of the study population. This indicates that the result was gotten from professionals of above 6-10 years' experience in Public Procurement related organizations

3. **Job title/role of respondents**

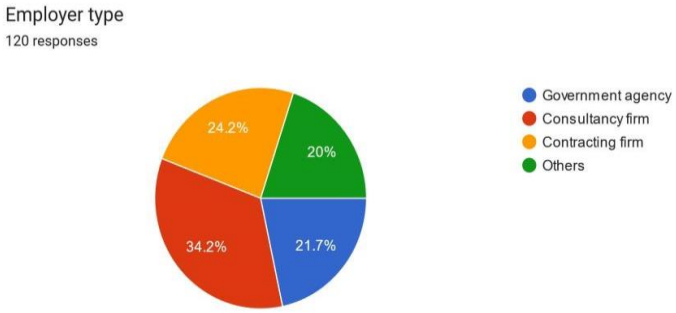
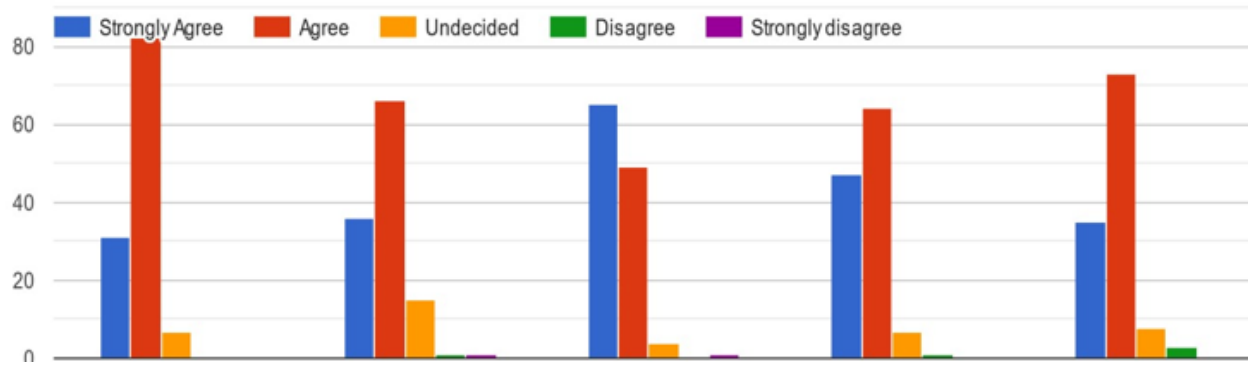


Figure 3 Current Job Title/Role of Respondents (Authors' credit)

As indicated in the above Table and Figure, most of the respondents work in Consultancy firms. They constitute 34.2%, Contracting firms constitute 25% and the Government agency workers constitute 21.7% of the total study population. This indicates that the result was gotten from professionals who work in Public Procurement related organizations

Table 4.1 Factors affecting inclusive growth in the use of innovation and technology

Factors	5	4	3	2	1	F	Fx	Score	Rank
A. Digital infrastructure challenges	65	49	4	1	1	120	536	4.47	1
B Government policies initiatives	47	64	7	1	1	120	515	4.29	2
C Socio economic challenges	31	82	7	0	0	120	504	4.20	3
D. Educational gaps	35	73	8	3	1	120	498	4.15	4
E. Knowledge sharing gaps	36	66	15	2	1	120	494	4.11	5



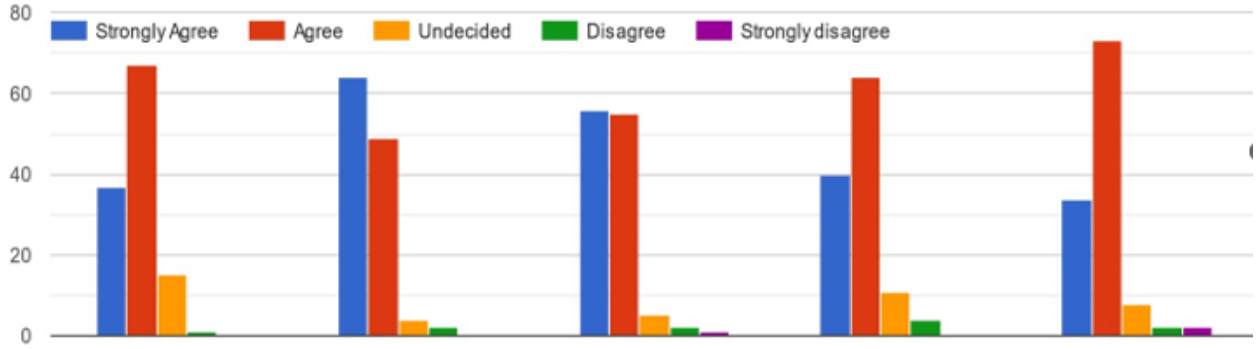
Digital Infrastructure Challenges | Government Policy Initiatives | Socio economic challenges | Educational Gaps | Knowledge sharing Gaps

4.1 Discussion of Findings

From Table 4.1 Digital infrastructure challenges ranked 1st, Government policies ranked 2nd, socio economic challenges ranked 3rd, Educational gaps ranked 4th and knowledge sharing gaps ranked 5th with corresponding mean scores of 4.47, 4.29, 4.20, 4.15 and 4.11 respectively.as indicated in Table 4.2.

Table 4.1 The role of Quantity surveyors in improving Inclusive growth in innovation and technology

Factors	5	4	3	2	1	F	Fx	Score	Rank
A. Building partnerships	43	74	2	1	0	120	519	4.33	1
B. Encouraging inclusiveness	53	55	9	2	1	120	517	4.30	2
C. Regular training and mentorship	49	53	17	1	0	120	510	4.24	3
D. Advocacy	51	51	15	2	1	120	509	4.24	3
E. Addressing socio economic challenges	31	65	14	6	4	120	473	3.94	5



Building Partnerships	Encouraging inclusiveness	Regular training and mentorship	Advocacy	Addressing socio economic challenges

4.2 Discussion of Findings

In Table 4.2, As identified by the study: Building partnerships ranked 1st with a mean score of 4.33. Encouraging inclusiveness ranked 2nd with a mean score of 4.30. Regular training and Advocacy addressing socio economic challenges both ranked 3rds, with a mean score of 4.24 respectively. Addressing socio economic challenges ranked 5th with mean score of 3.94 respectively.

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5.0 Conclusions

The research on Inclusive growth in Innovation and technology: the role of Quantity Surveying professionals in South-south Nigeria has highlighted the need for professionals and government involvement in supporting growth in innovation and technology for the construction industry in Nigeria. The research objectives 1 and 2 was achieved leading to the following conclusion.

i. The study found that digital infrastructure challenges, Government policy initiatives, Socio economic challenges, educational gaps, Knowledge sharing gaps are factors affecting inclusive growth in innovation and technology in the construction industry.
ii. The role of Quantity surveying professionals and other pertinent stakeholders' involvement will significantly improve inclusive growth in innovation and technology through building partnerships, encouraging inclusiveness, regular training and mentorship, Advocacy and addressing socio economic challenges in Nigeria

Based on the findings of the study, the following recommendations were made:

i. Quantity surveyors and other pertinent stakeholders should take steps that strengthens collaboration and inclusivity among professionals in Nigeria for fostering inclusive growth in Innovation and technology
ii. Commitment to solving development issues through the use of innovation and technology should be a priority driver of sustainable innovation practices among professionals.

Conclusively, the study contributes to previous studies on improving the use of innovation and technology in infrastructure development emphasizing that unified actions and inclusivity through fostering collaboration can improve the use of innovation and technology in infrastructure development.

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