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Utilization of Quantity Surveying Software: Its Impact On Quantity Surveyors' Core Duties

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ABSTRACT

Utilization of information communication technology has contributed to the increase in the new innovation that are currently seen in the construction industry. The impacts span across all the professions in the construction industry across the globe. This study assessed thebenefits of proper utilization of quantity surveying application software in Ondo State, Nigeria. This was with a view to ensure increase in the utilization of the information communication technology in the constuction industry in the study area.. An hundred (100) valid questionnaireswere administered among the consultant quantity surveyors and the contractor quantity surveyors practising in the contracting and consulting firms in the study area with a retrieval of Seventy-five (75). Frequency and percentage were used to analyze the demographic information of the respondent while data on the benefits of proper utilization of quantity surveying application software was analyzed using relative important index (RII).

Findings revealed that proper utilization of quantity surveying application softwareincreased productivity through streamlined data entry and management, increased productivity through automated quantities and cost calculations and speedup the measurement work.

The study recommends that proper utilization of quantity surveying application software should be more paramount to quantity surveyors pactising in bothcontracting and consulting firms so as to increase their productivities in the construction industry

Keywords : Software, information, communication, technology, construction industry, Quantity Surveyors, productivity

I. INTRODUCTION

It's clear that we live in a dynamic world marked by constant technological advancement. Information communication technology (ICT), also known as information technology (IT), has had a massive impact on business processes and systems.Rivard, Froese, Waugh, El-Diraby, Mora, Torres, Gill and O'Reilly, (2004).Industries like construction play a crucial role in the world's rapid growth.

According to Oladapo (2006), the scope and types of services provided by the Quantity Surveying (QS) profession in Nigeria have changed significantly over the past decade.

In that sense, Quantity Surveying is a field that aids in the necessary cost estimates for building materials and other construction-related components. Because quantity surveyors are responsible for a wide range of tasks, they must be educated, trained, and highly skilled in a variety of areas. The emergence of highly focused professionals, the adoption of innovative technological processes and development, the full range of advanced technologies, and the changing nature of the construction and development industry will require a much stronger emphasis in the field.

Considering the level of utilization of application software in the firms in Ondo state, south-western, Nigeria. This paper therefore examines utilization of quantity surveying software and its impact on quantity surveyors' core duties

The study Area

The study area for this study was Ondo state, south-western, Nigeria. Ondo state is one of the thirty-six states of Nigeria. The state which is also called the sunshine state consists of the

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following eighteen local government areas: Akure south,Akure North, Akoko North-East, Akoko North-West, Akoko South-East, Akoko South-West, Idanre, Ifedore, Ilaje,Ese Odo,Irele,Ile Oluji/Okeigbo, Odigbo, Okitipupa, Ondo East, Ondo West, Ose and Owo according to the last general election in October, 2020 (INEC). In view of this, the study was carried out across all the local governments in the state.

II. LITERATURE REVIEW

Impacts ofproper utilization of quantity surveying application software

The potential benefits and benefits of adoptinginformation communication technology (ICT) by Quantity surveyor (QS) are enormous (Oladapo, 2006). According to Smith (2001), the benefits associated with the introduction of ICT in surveying practice include increased productivity through streamlined data entry. and management, increased productivity through automated quantity and costing, increased productivity through the use of digitizers for measurement, elimination of measurement in many areas through direct extraction of quantities from CAD files, etc. Wong (2007), as discussed in Chan (2013) cited, lists some benefits of IT, including process efficiencies across geographically dispersed teams and project partners, improved internal communication and information flows, reduction in the cost of learning and knowledge acquisition, greater global competitiveness, and enthusiasm for being at the forefront of technological development. Castle (2002) opined that adoption of new technologies is necessary for quantity surveyors to be able to take advantage of the new opportunities presented by information communication technology.

III. METHODOLOGY

Data collection

According to Creswell (2009) and Yin (2009), the success of any data collection process depends on many factors, such as the identification of suitable and potential respondents, the organization and description of the appropriate sampling frame, the manner of and how the fieldwork is conducted and finally how the collected data is received, encoded, processed and analyzed.

This study adoptedprimary and secondary source data. Primary data were mainly through well structured questionnaire and personal observation made during visits to the firms in the study areas. In view of this, the study was carried out in Ondo state, south-west, Nigeria. From this arrangement contracting and consulting firms were selected randomly across the state.Sample sizes were determined, and respondents were identified.

IV. FINDINGS AND DISCUSSION

A total of 100 questionnaires were administered to the consultant quantity surveyors and the contractor quantity surveyors. Seventy-five (75) copies were retrieved and used for the analysis. This represent a response rate of 75 percent.

Table 1: Questionnaire distributed and retrieved

Number distributed	numbers retrieved	rate of return (%)
100	75	75%

Table 1 showed the number of questionnaire received from different organizations that made up the population

Data Analysis

Frequency and percentage were used to analyze the demographic information of the respondent while data on the benefits of proper utilization of quantity surveying application software was analyzed using relative important index (RII).

Demographic characteristics

Table 2: Year of experience in the construction industry

Classification	Percent	Frequency	X	FX
1-10	66.7	50	6	300
11-20	32	24	21	504
21-30	1.3	1	36	36
Total	**100**	**75**	**63**	**840**

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$$\text{Mean} = \frac{\sum FX}{\sum F} = 11.5 = \sim 12$$

Table 2, shows the demographic characteristics of the respondent on the year of experience which varies from 1 to 30 years, respondents within 1-10 years of experience were 66.6%, while respondents between 11-20 years of experience were 32% while 1.3% of the respondent were between 20-30 years of experience.

Table 3: Highest academic qualification

Classification	Frequency	Percent
HND	18	24
BSc	44	58.7
PGD	5	6.7
MSc	8	10.7
Total	**75**	**100**

Table 3, also shows the respondents view in their academic qualification. The respondents vary in their educational qualification, 24% are HND holders, 58.7% are BSc holders, 6.7% are PGD holders while 10.7 are MSc holders.

Table 4: Area or specialization in construction works

classification	Frequency	Percent
contractors quantity surveyors	29	38.7
consultant quantity surveyors	46	61.3
Total	**75**	**100**

Table 4,also shows the respondents view in their area of specialization in construction works. In their area of specialization in construction works, 38.7% were contractor's quantity surveyors, 61.3% were consultant quantity surveyors

Table 5: Type of project involved in

Classification	Frequency	Percent
Civil engineering project	11	14.7
Building project	61	81.3
Heavy engineering project	3	4
Total	**75**	**100**

Table 5, also shows the respondents view in their type of project involve, 14.7% were involved in civil engineering project, 81.3% were involved in building project while 4% were involved in heavy engineering project.

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Table 6: Impacts of proper utilization of quantity surveying application software

List	RII	Rank
Increased productivity through streamlined data entry and management	0.79	1st
Increased productivity through automated quantities and cost calculations	0.77	2nd
enhances easy coordination among project Participants faster and more efficient transmission of quality/cost through e-mail	0.75	4th
Improvement in the control of operations	0.73	5th
Enhances transparency and accountability	0.72	6th
Better financial control	0.7	7th
Speedy exchange of information	0.7	7th
Error reduction in data handling operations	0.68	8th
Increased range and depth of service	0.66	10th
Expanded services in relation to feasibility, time and cost planning using expert systems	0.66	10th
The software is user friendly	0.67	9th
The BQ produced with the use of software is having high accuracy	0.72	6th
Easy editing of measurement/BQ with the use of software	0.75	4th
Speedup the measurement work	0.76	3rd
It bring reduction of workforce to the measurement work	0.75	4th
The measurement work is high traceability	0.7	7th
Saving in operational cost	0.72	6th
Total	**12.23**	

Table 5, shows the respondents view about the benefits of proper utilization of quantity surveying application software which is shown in the table above that Increased productivity through streamlined data entry and management is the highest rank benefits by the respondents ranking (1^{st}0.79) on the table above and (2^{nd} 0.77) highest ranked is Increased productivity through automated

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quantities and cost calculations showed in the table above while speedup the measurement work (3rd 0.76) position in the rank table.

V. CONCLUSION

Findings revealed that proper utilization of quantity surveying application software increased productivity through streamlined data entry and management, increased productivity through automated quantities and cost calculations and speedup the measurement work.

VI. RECOMMENDATION

The study recommends that proper utilization of quantity surveying application software should be more paramount to quantity surveyors pactising in both contracting and consulting firms so as to increase their productivities in the construction industry

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