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1 2	Assessment of Participation of Quantity Surveyors in Oil and Gas Projects in Nigeria
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7 Abstract

6

Abstract-The study appraised the participation of Quantity's Surveyors in the execution 8 process of oil and gas projects and established the roles quantity surveyors play in such 9 projects. The study also considered factors that affects the participation of quantity surveyors 10 in oil and gas projects and adopted snowballing sampling techniques to survey quantity 11 surveyors practicing in oil and gas firms, oil servicing firms and consultancy firms, using 12 structured questionnaires to collect data. The data collected were analysed using percentiles 13 and mean score item. The study revealed that quantity surveyors are involved in oil and gas 14 projects, but on the average. As earlier said, the research identified four prevalent factors like 15 Lack of Technical Knowledge/Skills with a mean item score of 3.93, Educational Curriculum 16 in Tertiary Institutions with a mean item score of 3.89, Government Policies/Nigerian Content 17 Development Act with a mean item score of 3.76 and Inter-Professional Rivalries with a mean 18 of 3.67. The study recommended that the Nigerian Content Monitoring Board must ensure 19 that the provisions for local professional services in the ?"Act?" are obeyed strictly. Also, 20 quantity surveyors must ensure they understand the provisions applicable to their involvement 21 in oil and gas projects. It also recommended that the educational curriculum at tertiary 22 institutions be revised so as to widen the scope of knowledge. It further suggested that 23 quantity surveyors should be encouraged to be registered by International Cost Engineering 24 Council [ICEC], and any associated professional body. Lastly, regulatory bodies or 25 enforcement agencies could be established in order to and constrain every expert in the oil and 26 gas sector to his or her profession, as well as organise expository seminars, launch books, 27 journals, and other official publication so as to foster the awareness of the benefits of having 28 quantity surveyors in such projects to every stakeholder/shareholder (includ 29

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31 Index terms— cost engineer, cost estimator, engineering, quantity surveyor, oil and gas.

32 1 Introduction

33 ut of the leading industries in Nigeria, the oil and gas over the years has proven to be the most contributing and 34 determining factor of Nigeria's economy (Centre for Energy Economics ??CEE], 2006; Odularu, 2008). Recent studies (Klynveld Peat Marwick Goerdeler [KPMG] 2014); Owusu-Manu, 2011) divides the sector into: upstream 35 sector which is characterized by exploration and production of crude oil and gas; downstream sector (midstream 36 inclusive) which involves transmission and conveyance, distributing and marketing, refining, liquefied natural gas; 37 and services sector which includes exploration support services, drilling services, downstream services, wireline 38 services, refinery maintenance etc. Adepetun (2013), opined that the petroleum sector accounts for more than 95% 39 of export earnings and more than 75% of Nigerian Federal Government revenue. Likewise, the Nigerian economy 40

3 PREVIOUS STUDIES A) QUANTITY SURVEYORS AND THE OIL AND GAS INDUSTRY

depends upon the Petroleum Industry, with the contribution to National Revenue exceeding 90% (Onyeador,
 2011).

Studies by (Jagboro and Dada, 2012; Rabie and Riad, 2011) defined the traditionally quantity surveyor to be a 43 professional concerned with the contracts and costs on construction projects, and that they control construction 44 costs by accurate measurement of the work required. In their study, they also ascertained that these methods 45 involve activities which may include value management, tendering, valuation, change control, claims management 46 and cost estimation. Jagboro (1991) therefore asserted that the quantity surveying profession was at start 47 known for expertise in building work however, an increasing evolution of the profession into new areas including 48 engineering, contract management, and project management. In addition, ??ohammad and Price (2014), in their 49 study also pointed out the fact that procurement is also a major aspect of contract management which happens 50 to be capital intensive. Mogbo (1998), further stressed that quantity surveying is said to be an applied science 51 but which has its root in construction Economics and Management, which is applicable in Engineering: Civil, 52 Electrical, Mechanical, Process, Petroleum etc). 53 Previous studies (Circa, 2012; Said, Shafiel, and Omran, 2010; Nkado, 2002) has shown that there has been

Previous studies (Circa, 2012; Said, Shafiel, and Omran, 2010; Nkado, 2002) has shown that there has been a huge development in the number of services a quantity surveyor can render. Some of which are; investment appraisal, advice on cost limits and budgets, whole life costing, value management, risk analysis, insolvency services, cost engineering services, subcontract administration, technical auditing, planning and supervision, valuation for insurance purposes, project management, facilities management, administering maintenance programmes, advice on contractual disputes, planning supervisor, employers' agent, programme management, cost modelling, and sustainability advisor ??Seleey, 1993).

Moreover, the findings by the Association for the Advancement of Cost Engineering International [AACEI] 61 (2007) reported the relationship between the Cost Engineer and a Quantity Surveyor. While Engineers are 62 responsible for functional and physical creation (design) in term of dimensional element of structures e.g. road 63 and bridge. However, seeing beyond the functional and physical dimension, less tangle dimensions of money, time 64 and other resources invested (collectively referred to as Costs), someone need to estimate the cost, determine 65 activities time to build it, continually monitor and control ,assess the progress in relation with time and money 66 expended to ensure clients objectives. However, the engineering skills and knowledge require for cost dimension 67 in construction are quite different. From that difference, the skills of a cost engineer is born. 68

Holmes and Joyce (1993) defines competency as action, behaviour or outcome which a person should be able 69 70 to demonstrate, or the ability to transfer skills and knowledge to new sector. Moreover, Onyeador (2011) opined 71 Knowledge which entails the technical, economic/financial, commercial, organizational, and political aspects of the sector to be key to effective participation of quantity surveyors in the Nigerian oil and gas projects. Opawole, 72 Awodele, Babatunde and Awodele (2012) concluded in their study that the training of quantity surveyors will 73 help them handle the measurement of civil engineering works. Previous researches suggested that Quantity 74 Surveyors need to possess a full understanding of the overall life cycle of exploration and production (upstream) 75 down to refining (downstream) to project life cycles and activities performed at each stage of the life cycle. A 76 multidisciplinary knowledge of other related professional disciplines is much required, since the quantity surveyor 77 occupies a central role of interacting with other members of the design and construction/engineering team (Hassal, 78 Dunlop and Lewis, 1996;Nkado, 2000). 79

Although, the Federal Government of Nigeria by the enactment of the Nigerian Content Development Act in April, 2010 has given rise to the hope of the involvement of the quantity surveying practice in the oil and gas projects, (Ojo and Eyitope, 2011), it is left to the quantity surveyor has a professional to possess some pre-qualification skills. Heum, Quale, Karlsen, Kragha and Osahon, (2003) highlighted certain promising areas where opportunities exist in the industry which are to include: fabrication and construction; well construction and completion; modification, maintenance and operations; transportation; control systems and ICT; design and engineering; and consultancy.

87 **2** II.

⁸⁸ 3 Previous Studies a) Quantity Surveyors and the Oil and Gas ⁸⁹ Industry

Olanrewaju, Anavhe and Abdul-Aziz (2014), noted that "Quantity Surveying is universal and is carried out under
different names, such as building economist, cost consultant, management consultant, cost economist, project
consultant, and commercial manager". Also, the diversification has been said to have robbed the profession of an
identity ??Olanrewaju and Anavhe, 2008) unlike other allied profession where an engineer remains an engineer
or where an architect remains an architect.

Defining the role of a Quantity Surveyor, "the Quantity Surveyor is the expert who is concerned with financial
integrity, contractual matters, procurement, and delivering value for the clients' money invested" (Olanrewaju,
Anavhe and Abdul-Aziz, 2014, para. 1). The services that the Quantity Surveyors currently provide have shifted
from the 'downstream' to 'upstream'. The dynamism of quantity surveying enables it to venture into other areas

 $99 \hspace{0.1in} like facility management, value management, knowledge management, risk management, arbitration, maintenance$

¹⁰⁰ management, centre management, system management, and project management. Moreover, Quantity Surveyors

are adaptable creatures capable of reinventing themselves according to the demands of the modern progressive
 clients ??Cartlidge, 2003). Talking about the present roles that the Quantity Surveyors perform today, they
 have diversified into industries including petrochemical, manufacturing, automobile, mining, telecommunication,
 shipping, transport, and agriculture. The major impetus for this diversification is the changing requirements of
 the stakeholders. ??1996, ??002), that Quantity Surveying is more related to building design and construction,
 while Cost Engineering relates more to Engineering projects.

The major difference is that the two bodies responds to different professional bodies and have different modes in taking professional qualification. In its publication, AACEI (2007) stated least years allowed becoming a Quantity Surveying and Cost Engineer. For a Cost Engineer to be certified, it requires at least 8years of postgraduation of which four (4) must be a degree/HND in law, business administration, information technology, accounting etc. Also, the Quantity Surveying, just 36months industrial experience and a degree/HND level will make a Cost Engineer.

A step to creating opportunities for Quantity Surveyors by the Government is the enactment of the Nigerian 113 Content Development Act, April 2010. Under Clause 15, 28 and 42, NIQS has the chance to creating 114 opportunities for its members in order to compliment the few in the industry working as Contract Engineer, 115 Project Control Engineer, Proposal and Estimating Engineer, Planning Engineer etc c) Educational Curriculum 116 for Administration of Engineering Projects Quantity Surveying profession was at start known for expertise in 117 building work. There is, however, an increasing evolution of the profession into new fields including engineering. 118 For this evolution to be worthwhile in Nigeria, there is the need to understand the major aspects under which 119 120 engineering constructions are administered, and the scope of Quantity Surveyors' education and training in 121 Nigeria (Jagboro, 1991).

The researcher opined that Quantity Surveyors services are fully appreciated when it comes to engineering projects unlike Nigeria where their involvement is fully appreciated for building engineering constructions but at seemingly low level in engineering projects. Some previous works attributed this to professional rivalries while some are of the opinion that the present education/training of Quantity Surveyors in Nigeria has not led to adequate qualitative competence of the quantity surveyors due to the embryonic state of the discipline.

As a discipline, Quantity Surveying is said to be concerned with detailed calculation and measurement of both 127 materials and labour required for construction activities including building, and engineering project, reveals a 128 multi-disciplinary nature. Jagboro emphasized the link between the Nigerian educational curriculum and the 129 administrative aspect of the profession in handling Engineering projects. However, Seleey (1993) is of the opinion 130 that sound knowledge and expertise of project design and cost solution to physical and geological problems 131 are the required proficiency for administering civil engineering projects. Quantity Surveyors' education as an 132 applied science which is in effect a construction economics and management oriented that covers various areas 133 134 of construction sciences (engineering: civil, electrical, product and chemical, among others), pure and applied economics, finance, accounting, politics, sociology, government administration and law; the study identified 135 quantity surveyors' training to be interdisciplinary covering about 80% of course required providing financial 136 administration required for all forms of constructions. (Mogbo, 1998). Jagboro (1991) opined that the educational 137 training of quantity surveyors in Nigeria has brought about nothing but inadequate quantitative competence of 138 the professionals which is as a result of the embryonic state of the discipline is also seconded by Mogbo (1998) 139 who advocated for an overhauling to the quantity surveyors syllabi in the Nigerian tertiary institutions to respond 140 to all engineering projects. Contrary to aforementioned opinions, Ajanlekoko (2003), emphasized the recognition 141 of the curriculum of quantity surveying programme by the international assessment that quantity surveyors 142 in Nigeria possess requisite skills, education and training to ensure value for money in all construction works. 143 Adebola (2002) who asserted that the present level of education and training of Quantity Surveyors in Nigeria is 144 adequate for that required for all forms of engineering projects. However, ??wodele (2003) believes that lack of 145 adequate training is not a serious factor that influences the involvement of Quantity Surveyors in civil engineering 146 works in Nigeria. 147

The research methodology of the study involved a review of the Higher Diploma and Degree syllabi of the Polytechnics and Universities of the Nigerian education system respectively. The syllabi were obtained from the polytechnic and universities in the south western Nigeria where quantity surveying are studied at both undergraduate and postgraduate levels. In a publications, Seeley (1993) argued that the skill requirements for the execution of civil engineering projects are sound knowledge and expertise of engineering construction including proficiency in proffering design solution to physical and geological problems; and proficiency in cost appraisal.

Civil engineering as defined by the Curriculum and Course Specification for Nigerian University system (2005) is the discipline involved in the planning, design, construction and operation of physical facilities essential to modern life and community living. It also defines the discipline to be involved in financial probity in the conception, planning, and execution of development projects (all forms of engineering infrastructure); as well as a discipline that requires adequate training in feasibility studies of capital projects, cost modelling, contract documentation and procurement, contract administration and management, project management consultancy, information technology, facility management, arbitration, ands fire insurance assessment.

From the discussion of findings, a sample was drawn from the curriculum specification of the Nigerian University commission and the National Board of Technical Education for degree courses in quantity surveying and civil engineering. The result reveals a greater correlation of civil engineers education and training to 'design and

construction' and a greater correlation of Quantity Surveyors education and training to 'cost appraisal and 164 management of civil and other engineering projects. These services constitute the major components of the cost 165 appraisal and financial administration of engineering projects. The research shows a low correlation between 166 the curriculum and course specification of quantity surveying in the Nigerian education system and 'Design and 167 Construction' of civil engineering constructions. Quantity Surveyors are not expected to design and construct 168 civil engineering infrastructure but to show adequate understanding of the design and construction with the 169 aim of being able to communicate and interpret for the purpose of the cost management services. The results, 170 however, agree with Seeley (1993) that while cost appraisal forms a substantial part of the education and training 171 of Quantity Surveyors, it represents only a part of the education and training of civil engineers. 172

The researcher concluded that revealing that the study the education and training of quantity surveyors in 173 Nigeria provides adequate skill requirement for providing services requiring measurement of civil engineering 174 works as well as services requiring evaluation of civil engineering works and financial management with about 175 51.2% and 52.2% of the curriculum and course content of University and Polytechnic respectively satisfying 176 directly the requirement of cost appraisal and administration of the financial aspects of civil engineering and 177 other engineering projects. In was therefore suggested that there should be a continuous overhauling of the 178 curriculum and course content of quantity surveying in the Nigerian higher education system. 179 III. 180

¹⁸¹ 4 Research Methodology

The study was carried out by carrying out a survey which will give an overview of the numerical level of 182 participating Quantity Surveyors in oil and gas projects. As a result of this, this research was carried out 183 by acquiring primary and secondary data which was used to analyze the research questions. The primary data 184 was collected systematically with the use of questionnaire while the secondary data was gotten from journals of 185 related literatures. The study was done through questionnaires distribution to seek the view of Quantity Surveyors 186 which were self-administered. The research population was characterised of Nigerian Quantity Surveyors/Cost 187 188 Engineers practicing in oil and gas companies and quantity surveying firms who have executed oil and gas projects. These members were chosen based on the fact that the professionals have the required knowledge (i.e. experience) 189 for the analysis for the research questions. 190

Non-Probabilistic sampling technique was used, i.e. Snowball sampling technique. The reason behind the 191 employment of this type of sampling technique is because of the peculiarity of the study i.e. it might not be easy 192 to access the Quantity Surveyors that are involved in the execution of oil and gas projects. Where N = number193 of respondents to a particular scale n = total number of respondents. Analysis of data collected is quantitative 194 in nature. The first section which contains the Demographic Information of the Respondents was analysed using 195 the Percentile. While the second, third and fourth sections which are to identify the roles Quantity Surveyors 196 play in oil and gas projects; to assess the level of involvement of Quantity Surveyors in such projects; to identify 197 the factors affecting the participation of Quantity Surveyors in oil and gas projects respectively, was analysed 198 using the Mean Item Score (MIS). The mean item score formula is given by: Global Journal of Researches in 199 Engineering () Volume XVII Issue IV Version I 30 Year 2017 J Any mean score below 3.00 is considered a 200 negative decision, while any mean score from 3.00 and above was considered a positive decision. 201

²⁰² 5 IV. Data Presentation and Analysis

Fifty Questionnaires were administered among Quantity Surveyors who practices in upstream sector companies, downstream sector companies, oil and gas servicing firms and quantity surveying firms, of which only a total of 45 questionnaires were recovered successfully.

Table 4 Table 4.4 shows the Years of Working Experience of the Respondents; 16 Quantity Surveyors are having 206 a working experience between the range 6-10years; while 12 Quantity Surveyors are having a working experience 207 between the range 11-15 years; also 9 Quantity Surveyors are having a working experience between the range 208 1-5years; 6 Quantity Surveyors are having a working experience range of 16-20years and lastly; only 2 Quantity 209 Surveyors are having a working experience between the range 21-25 years. Table 4.5 reveals the number of Oil 210 and Gas projects the respondents has been involved in; 35 Quantity Surveyors have been involved in projects 211 between the range 1-9; while 9 Quantity Surveyors have been involved in more than 9 projects. However, one 212 of the questionnaires administered, one was left void. 7 shows the respondents' opinion on the level of Quantity 213 Surveyors in Oil and Gas projects; 23 Quantity Surveyors which makes up 51.1% opined that the Quantity 214 Surveyors' level of participation in oil and gas projects is on the Average, while 11 Quantity Surveyors which 215 makes up 24.4% were of the opinion that the Quantity surveyors' level of participation in oil and gas projects is 216 217 low, also 9 Quantity Surveyors with 20.0% were of the opinion that the Quantity Surveyors' level of participation 218 in oil and gas projects is high, just a (1) Quantity Surveyor which makes up 2.2% opined that the Quantity 219 Surveyors' level of participation in oil and gas projects is very high and lastly, a (1) Quantity Surveyor which 220 makes up 2.2% opined that the Quantity Surveyors' level of participation in oil and gas projects is very low. Table 9 shows the Respondent's Perception on the Level of Participation of Quantity Surveyors in the Execution 221 of Oil and Gas Projects based on roles they perform in such projects: From the analysis, their response depicts 222

223 that the level at which the Quantity Surveyors participates as Cost Engineers is the most ranked with a mean

score of 4.33; while as Cost Engineers are ranked with a mean score of 4.13; while a mean score of 3.89 for Quantity Surveyors participating as Total Cost Managers; Procurement Planning Managers with a mean score of 3.77; and Contract Managers with a mean score of 3.67; Contrarily, the roles ranked lowest were: Investment Feasibility Managers with a mean score of 2.98; Arbitrators with a mean score of 2.93; Technical Auditor with a mean score of 2.87; Supply and Distribution Managers with a mean score of 2.80; and, Health, Safety and Environment Managers ranked the lowest with a mean score of 2.13.

²³⁰ 6 Discussion of Findings

The study is characterized with respondents working in Lagos State, comprising of 37 Quantity Surveyors (82.2%)231 who are full time employed, 5 Quantity Surveyors (11.1%) who are Temporary staffs i.e. Adhoc workers and 3 232 Quantity Surveyors (6.7%) who are part time staffs i.e. Casual Workers, in their workplaces. 22 (Yakub, 2005). 233 The analysis shows that the level of participation of Quantity Surveyors in oil and gas projects is on the average. 234 With this, it will be impossible to disprove the afore-reviewed literatures which submit that the participation of 235 Quantity Surveyors in oil and gas projects is on the increase. Nevertheless, the analysis shows the opinion of 236 the respondents on the level of involvement, using the roles the Quantity Surveyors have been playing in past 237 projects. Their responses show that there has been a high involvement of Quantity Surveyors playing the roles 238 of Cost estimators and secondly, cost engineers. Conversely, the study shows that the level of participation of 239 Quantity Surveyors playing the roles of Investment Feasibility Manager, Arbitrator Technical Auditor and Supply 240 and Distribution Manager is on a low scale. 241

The respondent also expressed their opinion on the delivery of oil and gas projects' dependency on the participation of Quantity Surveyors. The analysis shows that the dependency of oil and gas projects' delivery on the participation of Quantity Surveyors is on the average. The research identified five causative factors that could affect the participation of Quantity Surveyors in oil and gas projects, but four factors are prevalent which are: Lack of Technical Knowledge/Skills, Educational Curriculum in Tertiary Institutions, Government Policies/Nigerian Content Development Act and, Inter-Professional Rivalries.

Results from the findings revealed that Lack of Technical Knowledge/ Skills is the most prevalent factor affecting the participation of Quantity Surveyors. This finding agrees with Onyeador (2011) which affirms that Knowledge which ranges from technical general knowledge to technical detailed knowledge is the first criteria to effective participation of Quantity Surveyors in the oil and gas project. Quantity Surveyors have to understand the overall Lifecycle of exploration and production to refining of the Oil and Gas industry.

Another factor that affects the participation of Quantity Surveyors in such projects is the Educational 253 Curriculum in Tertiary Institutions. This is supported by Jagboro (1991) who opined that the educational 254 training of quantity surveyors in Nigeria has brought about nothing but inadequate quantitative competence 255 of the professionals which is as a result of the embryonic state of the discipline; and by Mogbo (1998) who 256 advocated for an overhauling to the quantity surveyors syllabi in the Nigerian tertiary institutions to respond 257 to all engineering projects. This disproves the assertion Ajanlekoko (2003), who emphasized the recognition 258 259 of the curriculum of quantity surveying programme by the international assessment that quantity surveyors in 260 Nigeria already possess requisite skills, education and training to ensure value for money in all construction works. 261 Likewise, Adebola ??2002) asserted that the present level of education and training of Quantity Surveyors in 262 Nigeria is adequate for that required for all forms of engineering projects.

Government Policies/Nigerian Content Development Act has been discovered to be the next prevalent factor. 263 The result shows that the Act could either favour or disfavour the profession's involvement in oil and gas projects. 264 According to PIB publication, the Nigerian Local Content Development Act requires that professional services 265 including legal, financial and insurance services be provided solely by Nigerian firms. Since Quantity surveyors 266 provides financial services in construction and engineering projects (Mogbo, 1998), the profession is not left out. 267 Lastly, Inter-Professional Rivalries has been researched to be another prevalent factor affecting the participation 268 of Quantity surveyors in oil and gas projects. Rivalries among the professionals in the construction industry 269 refer to the degree of which professionals in the construction industry respond to competitive moves of other 270 professionals in the industry ?? Olanrewaju 2011). This assertion correlates with this research, such that, has 271

there are rivalries of Professionals in construction projects, likewise oil and gas projects.

273 **7** VI.

274 8 Conclusion

The findings show that the level at which Quantity Surveyors participates in oil and gas projects is on an average 275 level. It also shows that most Quantity Surveyors currently practicing in such projects are playing the roles of 276 277 Cost Estimator and Cost Engineer. Conversely, the level of participation of Quantity Surveyors as Investment 278 Feasibility Manager, Arbitrator, Technical Auditor, Supply and Distribution Manager and, Health, Safety and 279 Environment Manager is low. It was also revealed that level of dependency on the services the Quantity Surveyors 280 render to the success of oil and gas project is on the average. The research hypothesized five factors that affect 281 the participation of Quantity Surveyors in oil and gas projects of which four was deduced to be more prevalent. These factors are; Lack of Technical Knowledge/Skills which is the most prevalent; Educational Curriculum in 282

283 Tertiary Institutions; Government Policies/Nigerian Content Development Act and Inter-Professional Rivalries.

²⁸⁴ 9 VII.

1

285 10 Recommendations

In the light of this foregoing conclusion drawn from the findings, it is deemed fit that some strategies and realistic 286 recommendations that if properly implemented would alleviate some of the problems facing the participation of 287 Quantity Surveyors in oil and gas projects. These recommendations include; 1. Nigerian Content Monitoring 288 Board which was created by the Government so as to monitor the achievement of local content in the oil and gas 289 industry, should begin/continue to ensure that the provisions for local professional services in the Act are adhered 290 strictly, and any defaulters are brought to book. Also, Quantity Surveyors should ensure they understand the 291 provisions applicable to their involvement in oil and gas projects. 2. The educational curriculum at Tertiary 292 institution should be revised as the scope of the profession increases. Measurement, estimating, procurement, 293 management, etc. of heavy engineering projects and oil and gas components should be incorporated in the 294 curriculum. 3. Also, Quantity Surveyors should be encouraged to be registered by International Cost Engineering 295 Council [ICEC], and any associated professional bodies, so that the necessary skills and knowledge to participate 296 in oil and gas projects can be acquired. 4. Regulatory bodies or enforcement agencies should be established in 297 order to constrain every expert involved in the execution of oil and gas projects to his or her profession. Also, 298 expository seminars, launch books, journals, and other official publication should be encouraged so as to make 299 every stakeholder/shareholder (including the Governments and Oil and Gas Parastatals) involved in oil and gas 300 projects aware about the benefits of having Quantity Surveyors in such projects.

> Table 4.2 shows the Quantification of the Respondents; 22 Quantity Surveyors amounting to 48.9% are Members of NIQS; 12 Quantity Surveyors amounting to 26.7% are Probationers; while 8 Quantity Surveyors amounting to 17.8% happened to be Graduates and; 3 Quantity Surveyors amounting to 6.7% were fellows of NIQS. Table 4.3 reveals the Type of Employing Company who are involved in Oil and Gas projects; 15 Quantity Surveyors amounting to 33.3% are staffs in Quantity Surveying Consultancy Firms; while 11 Quantity Surveyors amounting to 24.4% works in the Companies of Downstream Sector; while 11 Quantity Surveyors amounting to 24.4% are recruited to Oil Servicing Firms; and 8 Quantity Surveyors amounting to 17.8% are staffs in Companies in the Upstream Sector.

> > Figure 1:

Type of Employment	Frequency	Percent
Full time	37	82.2
Temporary(daily)	5	11.1
Part time	3	6.7
Total	45	100.0

Figure 2: Table 1 :

 $\mathbf{2}$

Qualification	Frequency	Percent
MNIQS	22	48.9
PROBATIONER	12	26.7
GRADUATE	8	17.8
FNIQS	3	6.7
Total	45	100.0

Figure 3: Table 2 :

3

Employer	Frequency	Percent
QS		
Consulting	15	33.3
Firm		
Downstream	11	24.4
Oil Servicing Firm	11	24.4
Upstream	8	17.8
Total	45	100.0

Figure 4: Table 3 :

 $\mathbf{4}$

 $\mathbf{5}$

Years of Working Experience	Frequency
6-10	16
11-15	12
1-5	9
16-20	6
21-25	2
Total	45

Figure 5: Table 4 :

Projects	Frequency
1-9	35
Above 9	9
Total	44
Void	1
Total	45

Figure 6: Table 5 :

6

Roles of Quantity Surveyors in Oil and Gas projects	Mean	Rank
Cost Estimator	4.62	1
Cost Engineer	4.30	2
Contract Manager	4.16	3
Procurement Planning Manager	4.11	4
Cost Planning Manager	4.11	4
Total Cost Manager	4.11	4
Budgeting Manager	3.76	7
Asset and Facility Manager	3.67	8
Value Analysis and Engineering Manager	3.67	8
Planning Manager	3.64	10
Assessment Manager	3.60	11
Investment Feasibility Manager	3.53	12
Project Performance Manager Implementation	an & .49	13
Arbitrator	3.33	14
Resource Manager	3.22	15
Risk Manager	3.20	16
Technical Auditor	2.93	17
Supply and Distribution Manager	2.84	18
Health, Safety and Environment Manager	2.24	19

Figure 7: Table 6 :

6

Figure 8: Table 6

 $\mathbf{7}$

Level of Participation	Frequency	Percent
Average	23	51.1
Low	11	24.4
High	9	20.0
Very High	1	2.2
Very low	1	2.2
Total	45	100.0
Table		

Figure 9: Table 7 :

8

Frequency	Percent
19	42.2
14	31.1
6	13.3
5	11.1
1	2.2
45	100.0
	Frequency 19 14 6 5 1 45

Figure 10: Table 8 :

9

Roles of Quantity Surveyors	Mean	Rank
Cost Estimator	4.33	1
Cost Engineer	4.13	2
Total Cost Manager	3.89	3
Procurement Planning Manager	3.77	4
Contract Manager	3.67	5
Risk Manager	3.47	6
Cost Planning Manager	3.36	7
Value Analysis and Engineering Manager	3.33	8
Budgeting Manager	3.29	9
Resource Manager	3.29	9
Asset and Facility Manager	3.24	11
Project Implementation and Performance Manager	3.13	12
Planning Manager	3.13	13
Assessment Manager	3.02	14
Investment Feasibility Manager	2.98	15
Arbitrator	2.93	16
Technical Auditor	2.87	17
Supply Manager	and Dist 2180 tion	18
Health, Safety and Environment Manager	2.13	19

Figure 11: Table 9 :

10

Factors	Mean	Rank
Lack of Technical Knowledge/Skills	3.93	1
Educational Curriculum in Tertiary Institutions	3.89	2
Government Policies/Nigerian Content Development Act	3.76	3
Inter-Professional Rivalries	3.67	4
Corruption/Politics played amongst Stakeholders	2.56	5

Figure 12: Table 10 :

10

Υ.

Figure 13: Table 10

Quantity Surveyors (48.9%) are Members of NIQS, 12 Quantity Surveyors (26.7%) are Probationers, while 8 Quantity surveyors (17.8%) are Graduates and, 3 Quantity Surveyors (6.7%) are Fellows of NIQS. 15 Quantity Surveyors (33.3%) are staffs in Quantity Surveying Consultancy Firms, 11 Quantity Surveyors (24.4%) are staffs in Quantity Surveying Consultancy Firms, same as Oil Servicing Firms, and 8 Quantity Surveyors (17.8%) are staffs in Quantity Surveying Consultancy Firms. 35 Quantity Surveyors have been involved in less than 10 projects, 9 Quantity Surveyors have been involved in more than 9 projects. 16 Quantity Surveyors have spent 6-10 years as working experience, 12 Quantity Surveyors have spent between 11-15 years as working experience, 9 Quantity Surveyors have spent between 1-5years as working experience, 6 Quantity Surveyors have spent between 16-20 years as working experience, 2 According to Jagboro (1991), the Quantity Surveyor profession was said to be into mainly building, but as the profession increased in evolution, in new areas which include Engineering, Contract Management, Project Management etc. "Interestingly, Quantity Surveying practice is gaining more relevance in Asset Management, Project Management, Taxation, Law, Insurance, Banking and Manufacturing especially oil and gas"

Figure 14:

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10 RECOMMENDATIONS

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