

COMPARATIVE ANALYSIS OF CONTRIBUTIONS OF BUILDING AND QUANTITY SURVEYING PROFESSIONS TOWARDS THE DEVELOPMENT OF SUSTAINABLE CONSTRUCTION INDUSTRY IN NIGERIA

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Abstract: The contributions of the building and quantity surveying professional bodies towards meeting the sustainable development goal of the construction sector and the economy since the start of their statutory mandates in Nigeria are examined. Statutorily, professional bodies like the Nigerian Institute of Building (NIOB), Council of Registered Builders of Nigeria (CORBON), Nigerian Institute of Quantity Surveyors (NIQS) and Quantity Surveyors Registration Board of Nigeria (QSRBN) are significant stakeholders in the development of sustainable construction in Nigeria. List of Registered Professional Builders (RPBs) and Quantity Surveyors (RQSs) and their Registered Consultancy Firms (RCFs) as well as the list of Nigerian States, Geo-Political Zones (GPZ), LGAs and their population distributions were obtained and adopted for the study and used to examine the level of spread of these professionals and their services. The study revealed that there are (1708) builders and (3469) quantity surveyors qualified and registered as well as (38) and (233) Consultancy firms, respectively under review, out of which Lagos State hosts the highest number of RPBs and RQS and RCFs with (553 & 1,175) and (12 & 73) respectively. South-West Zone with six States which accounts for (19.65%) of the Nation's population produced the highest number of RPBs, RQS and RCFs with (809; 1,412 and 13 & 83) respectively. Northeast with six States and (112) LGAs accounted for 13.55% of the Nation's population, and produced the least number of RPB (84) RQS (58) and Builders' RCF (01) QS RCFs (07) respectively. Interview method was also adopted to sample views of professionals from each of the two professions in regard to other vital issues relevant to the study. It concludes that the number of professionals produced by these professional bodies are appalling when compared to their demand, thus, posing a huge challenge, and recommends that professional bodies, other stakeholders and the Government should formulate ways to regularly increase these numbers in order to make their contributions impactful in the development of sustainable construction industry in Nigeria

Author keywords: construction industry, professional builder, quantity surveyor, sustainable development

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Citation: Nwabueze M. Anosike, Chike Raymond Enenmoh, Emmanuel Nkeleme and Timothy O. Mosaku (2016) Comparative analysis of contributions of building and quantity surveying professions towards the development of sustainable construction industry in Nigeria, *African Journal of Built Environment Research*, Vol. 1, Iss. 1, pp. 1-14.

INTRODUCTION

The significance of the construction industry (CI) to any nation's development aspirations cannot be over-emphasized. For instance, National Bureau of Statistics (NBS, 2015) cited in EMIS (2015) indicates that within the years 2012, 2013 and 2014 the CI contributed 4.2%, 5.5% and 6.2% respectively to Nigeria's Gross Domestic Product (GDP), and growth rate of 9.4%, 14.2% and 13.0% in the years 2012, 2013 and 2014, respectively. Onashile (2012) opines that a vibrant CI signifies an industry working at about full capacity and therefore with minimum unemployment rate along with a desirable low risk of social problems and by extension assures stability of the sector and nation's economy. This paper examines the contributory efforts of the professional bodies toward meeting the sustainable development goal of the CI sector, and the economy in line with their statutory mandates in Nigeria.

LITERATURE REVIEW

Ajanlekoko (1990) affirms that the CI is a prime motivator of any economy; and in Nigeria, the CI represents about 60% of the capital investment. According to Sharma (2008), the CI covers various forms of activities ranging from small mud house and village road construction to high-rise buildings, industrial structures, expressways, bridges, major dams, barrages, powerhouses, and other building and civil infrastructures. It further notes that the CI sector is basic to the development of any national activity like agriculture, industry, economic infrastructures, water, power, transportations and communication. He argues that the CI also acts as a stepping-stone in all industrial activities, and offers an environment to raise the standard of living of the people of a country.

Sharma (2008) further states that the construction industry belongs to the capital goods of the economy and produces assets in the form of buildings, roads, bridges, airports, among others which add to the Gross National Product (GNP) and increases the productivity of other sectors of the economy as well. That, it is well known fact that all sectors of the economy, whether infrastructural, industrial, financial, mining or even irrigation and agricultural have certain components of construction work associated with them, though in varying proportions. Sharma (2008) concludes that the implementation of a project is an investment decision for the development of the country.

The World Bank attributes the CI to account for between 3%-8% of the GDP in developing countries. The GDP in itself is used as a barometer to measure economic development of a nation within a given period. Hillebrandt (2000) opines that the CI sector forms a crucial focus of any nation's economy. Anosike (2011) views the CI as a large sector of the economy responsible for millions of jobs and a significant proportion of GDP in most countries. Thus, (Eteama 2011; Ibrahim, 2011) posits that there is a correlation between GDP growth rate and unemployment. Ogwumike (2012) also concludes that when CI is properly connected to

other sectors in the economy, the sector's impacts on economy are tremendous.

Development is defined by Ogun State Government (OGSG, 2005) as “the carrying out of any building, engineering or mining or other operation in, on, over or under any land, and the making of any environmentally significant change in the use of land, building or structure or the conversion of any land, building or structure from its established or approved use including the placing or display of advertisement on the land, building or structure”.

Section 1(1.1) of the National Building Code (NBC) of the Federal Republic of Nigeria (FRN, 2006) asserts that it was in the bid to enhance the development of sustainable CI that it was evolved with the objectives to eradicate the ugly circumstances prevailing in Nigeria at the time, such as, incessant collapse of buildings; fire infernos; built environment abuses and other disasters; use of non-professionals and quacks and lack of maintenance culture. According to Anosike, (2011), key professions recognized by the NBC of the FRN are major stakeholders to the development of the CI in Nigeria.

The NIOB (2011) asserts that a profession is a type of job that needs special training or skill, especially one that needs a high level of education and orientation. In this light FRN (2006) defined a registered construction professional as one who shall be a technically and legally qualified person who has a valid registration license to practice the profession issued by a relevant statutory regulatory bodies established for the control of that profession in Nigeria. Similarly, the NIOB (2011) for example defined a registered builder as a specialist who has received an approved standard of professional training and practice in construction technology, building production management, building surveying, maintenance management, cost estimation and tendering, building services, construction management, project management, etc. as well as sufficient experience, and statutorily registered by the Council of Registered Builders of Nigeria (CORBON). Moreover, that he may be involved in building education, research and development. OGSG (2005) posits that a person registered to practice in Nigeria must be, for example, a builder registered as a member of the CORBON. Further, seven professions in the CI such as - building, architecture, quantity surveying, among others and their respective regulatory bodies are recognized in Nigeria as major CI stakeholders (FRN, 2006; OGSG, 2005). As a result, certain sections of the NBC recognized the job roles of each of the professions, for example, Section 2.21, 2.24 and 2.32(c) specified that a registered builder is that professional empowered to prepare a building condition survey report, building maintenance manual, construction works programme, project quality management plan and project health & safety plan.

Other duties of the registered builder are found in the NBC, Section 13.12.4 which states that he shall be responsible for the daily “management of the execution of the building works including the

supervision of artisans and tradesmen” and Section 15 (compliance form) of the same code empowers the professional builder to attest to the proper carrying out of works such as - setting out, foundation/basement works, roofing and closing-up works, superstructure works, mechanical installation, electrical services installations and finishes works along with other concerned professionals before the works could be accepted to have been executed in accordance with the set quality and standards. In another development, the OGSG (2005), Section 291.5(1) (b). (vii) and Section 438.11(1). (c).9vi) recognizes the builder as a member of the Ogun State Urban & Regional Planning Board and Local Planning Authority respectively.

The regulated and other professions (Miscellaneous Provisions) Act 1978 recognized the building profession as one of the scheduled professions in Nigeria and Decree No.45 of 1989 (now ACT CAP 40 of 1990) gave legal backing and recognition to the building profession and also established CORBON by ACT CAP B.13 LFN (2004) to regulate the profession in all its ramifications (CORBON, 2012). Concisely, the building profession is therefore one of the scheduled professions in Nigeria’s CI which main role in the economy is realizing the dreams of the client and designers of construction structures with physical products that satisfies specifications and standards. Similarly, Section 2.21 and 2.32(b) of the NBC specified that the quantity surveyor could prepare a building condition survey report as well as contract documents, which include the priced bill of quantities. The Quantity Surveyor is thus the professional trained, certified and registered by the NIQS and QSRBN to render quantity surveying services. According to Dikko (2012), the quantity surveying profession is therefore one of the scheduled professions in Nigeria which main role in the economy is achieving value for money, probity and accountability in the management of project costs.

Table 2.1 indicates that both professional bodies were established with the main purpose to contribute in the pursuit of a particular goal, which is, to work assiduously as a team to develop and sustain the construction industry in Nigeria. This explanation can be justified in FRN, (2006) according to their professional mandates highlighted in ACT CAP B.13LFN, (2004) for Builders and ACT CAP Q1 LFN, (2004) for Quantity Surveyors. It is therefore believed that the contents of their vision, mission, objectives and the services they render are in tandem with their mandates. Because of the importance attached to quality in the construction industry NBC and the mandate to builders to supervise the daily production activities in a project, it may be argued that the services of professional builders may be required much more than others. Using the hypothesis that, for example, for a given large scale single project, the number of builders required may be estimated as follows, an estimator and or buyer, construction managers in charge of block, concrete, carpentry, steel works respectively, as well as labour management and general supervision. This may indicate that at least the professional services of four builders and maybe two QS would be needed in such single project.

The ratio of builders/quantity surveyors to a given project may depend on the number of such level of projects in a given location per time as well as the level of patronage by the client. All things being equal, if ten of such high large scale projects are located in each of the thirty-seven States plus Abuja, FCT, in just one year, it follows that at least one thousand four hundred & eighty builders and seven hundred & forty QS would be required to provide the required professional services to these projects. This may be a herculean task to achieve by the two professional bodies if the above postulation is upheld if this figure is compared to the lower figures of numbers being inducted into the professions annually. However, currently there is no literature or policy statement by any of the professional bodies that indicates benchmark ratio of these professionals to the population or project they could serve. Thus, the reason for the earlier postulation by the authors on the ratio of professionals to a large scale project.

Table 2.1 The vision and mission statement of the NIOB and NIQS

Nos.	Building	Quantity Surveying
1. Vision	Provide professional excellence and leadership for sustainable shelter.	Provide total cost and procurement management for the achievement of client's objectives in all types of capital projects and developments, from conception to commissioning and maintenance, in all sectors of the economy, for the attainment of sustainable National development and goals.
2. Mission	to enable members deliver with relevant stakeholders, sustainable shelter that addresses the housing needs of the Nation through research and development and global best practices.	to train and produce world-class QSs, regulate and continuously enhance QS ethical standards and technical competence aimed at providing quality services at all times, and the promotion of QS principles of construction economics, costs, procurement and management as sine qua non for effective delivery of all types of capital projects and developments from conception to commissioning and maintenance in all sectors of the economy (NIQS, 2015).
3. Objectives	<p>-promote science and practice of building tech, building maintenance, building surveying, building production, construction management and project management including all research and publications of the results for public benefit.</p> <p>-establish and maintain a high standard of competence and conduct of those engaged or about to be engaged in the said science and practice of building and the education and research connected therewith.</p>	<p>-promote the act and science of the practice of the profession of QS in all its ramifications</p> <p>-provide a platform or forum for meeting and discussing matters of mutual interest to QSs in Nigeria and to preserve and further the interest of QSs, cooperate and collaborate with the QSRBN to regulate and control the practice of the profession in Nigeria.</p> <p>-disseminate information and</p>

4. Background and Statutory Backing	<p>-provide a forum for meeting and discussing matters of mutual interest to professional builders in Nigeria and to preserve and further the interest of those within.</p> <p>-promote and stimulate the improvement of the technical and general knowledge of persons engaged or training to be engaged in the building profession.</p> <p>-make available information on matters affecting the profession in Nigeria and abroad.</p> <p>-promote an understanding of the building profession among members of the public and to confer with all professionals and other bodies within the construction industry and to act as the sole authority in the Federation of Nigeria with regards to all matters affecting the profession.</p> <p>-act as the body which the Government or other official or unofficial authorities or organization(s) in Nigeria can seek advice, assistance or the expression of views on any subject of concern or interest to the building profession in Nigeria.</p> <p>-The NIOB is the professional body for Builders and those who are about to be engaged in the Building Profession.</p> <p>-The professionalization of building materialized when the Chartered Institute of Building (CIOB) was established in U.K. in 1834 (NIOB, 2012).</p> <p>-In 1967 the Building profession was inaugurated in Nigeria by the NIOB as the first ever overseas centre of the U.K. CIOB.</p> <p>-The NIOB gained its autonomy from the CIOB in May, 1970.</p> <p>Statutory backing - the Builders' (Registration, etc.) Decree No. 45 of 1989 (now B.13 LFN, 2004) from the Federal Government of Nigeria.</p> <p>-The Council of Registered Builders of Nigeria (CORBON) was officially inaugurated on 24th April, 1990.</p> <p>-Membership strength is estimated at over five thousand across grades of fellows, corporates, graduates, associates, licentiates and technicians with chapters of NIOB existing across States of the Federation (NIOB, 2012).</p> <p>-Building profession is global and thus a noble one as it is recognized and practiced in different parts of the world namely, the U.K., Australia, Malaysia, Singapore, Hong Kong, South Africa, Ghana, Canada, Kenya, among others.</p> <p>-FRN (2006) Section 2.21, 2.24 and 2.32(c) specified that a registered builder is that professional empowered to prepare a building condition survey report, building</p>	<p>promote understanding of the profession among members of the public</p> <p>-to co-operate with members of other professional bodies in Nigeria & elsewhere for the promotion and continuous improvement of the professional practices and standards.</p> <p>-enter into partnership with organizations in both the public and private sector in promoting the interest of members and the development of the profession of QS both in Nigeria and abroad (NIQS, 2015).</p> <p>-The professional trained, certified and registered by the NIQS and QSRBN to render Quantity Surveying services.</p> <p>-NIQS (2015), the profession of Quantity Surveying is practiced in Nigeria along the same pattern as in the United Kingdom and other Common Wealth Countries.</p> <p>-In America, they are known as Cost Engineers, thus a member of African Association of Quantity Surveyors (AAQS), International cost engineering council (ICEC) and Commonwealth Association of Surveying and Land Economy (CASLE) (NIQS, 2013).</p> <p>-The regulated and other professions (Miscellaneous Provisions) Act 1978 recognized Quantity Surveying by Decree No.31 of 1986 (now CAP Q1 LFN, 2004) gave legal backing and recognition to the Quantity Surveying profession and also set up the Quantity Surveyors Registration Board of Nigeria (QSRBN) to regulate the profession in all its ramifications (NIQS, 2015).</p> <p>-According to Dikko (2012) QS is therefore one of the scheduled professions in Nigeria which main role in the economy is</p>
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	<p>maintenance manual, construction works program, project quality management plan and project health & safety plan.</p> <p>-Section 13.12.4 which states that he shall be responsible for the daily “management of the execution of the building works including the supervision of artisans and tradesmen”. Section 15 (compliance form) of the same code empowers the professional builder to attest to the proper carrying out of works such as - setting out, foundation/basement works, roofing and closing-up works, superstructure works, mechanical installation, electrical services installations and finishes works along with other concerned professionals before the works could be accepted to have been executed in accordance with the set quality & standards.</p> <p>-The OGSG (2005), Section 291.5(1) (b). (vii) and Section 438.11(1). (c).9vi) recognizes the builder as a member of the Ogun State Urban & Regional Planning Board and Local Planning Authority.</p>	<p>achieving value for money, probity and accountability in the management of project costs.</p> <p>-Practiced in U.K, America, South Africa, Zambia, Canada, Australia, Malaysia, among others.</p> <p>-FRN (2006) section 2.21 and 2.32(b) specified that the quantity surveyor could prepare a building condition survey report as well as contract documents which includes the priced bill of quantities.</p>
5. Services Rendered	<p>Consultancy; building construction, project management, building maintenance, building surveying, facility management, feasibility and viability studies, feasibility of abandoned projects, litigation and arbitration, variation and fluctuation, resident supervision, prime consultancy, among others (NIOB, 2012).</p>	<p>Consultancy; feasibility studies of capital projects, cost modeling, contract documentation and procurement, contract administration and management, project management, drawing the client’s brief, arbitration, & expert witness (NIQS, 2015).</p>
6. Job Opportunities	<p>Consultancy, full employment in construction industry firms, educational institutions, banks, finance, insurance, housing Corporations, Military establishments, Oil & Gas industry, the three tiers of Government and their agencies, multinational institutions, real estate development firms and lecturing in tertiary institutions, research institutes, contractor, manufacturer of construction materials, or as an entrepreneur.</p>	<p>Consultancy, full employment in the federal, state and local Government authorities, Government parastatals and agencies, construction industry firms, Nigeria armed forces, multinational institutions, construction companies, real estate development firms and lecturing, research institutions and individual developers, Oil & Gas, Financial institutions, insurance firms</p>
7. Capacity Building	<p>-(CORBON, 2014) about 25 Federal, State & Private Universities offer BSc Building or Building Technology programs and about 40 Polytechnics, Colleges of Technology and Education run Ordinary National Diploma (OND) and Higher National Diploma (HND) and National Certificate of Education (NCE) in Building Technology.</p> <p>-Notable institutions are ABU, Zaria, University of Ife, Lagos & Jos, FUT, Owerri, Yaba Tech, Lagos, Auchu Poly, Edo State and Federal Polytechnics, Imo State, covenant University, Ota</p>	<p>-(NIQS, 2015) about 20 Federal, State & Private Universities offer BSc Quantity Surveying and about 32 Polytechnics and Colleges of Technology only run Ordinary National Diploma (OND) and Higher National Diploma (HND) in Quantity Surveying.</p> <p>-Notable institutions are ABU, Zaria, OAU, Ife, Uni-Lag, FUT, Owerri, Imo State Uni., Yaba Tech., Lagos, Gregory University, Uturu</p>

respectively.

-Core courses - Building construction & materials, construction technology, building structures & thermodynamics, theory of structures, soil mechanics, building drawing, measurement of building works & services, building production management, tendering, estimating and price analysis of building works, project management and information technology, professional practice, ethics and procedures and contract law and arbitration.

BSc. program duration – 5years

-Admission requirement - at least five ordinary level school certificate result at credit passes obtainable in not more than two sittings from either NECO, WASCE, GCE, NABTEB or its approved equivalent. Amongst the five subjects are - English, Mathematics, chemistry and Physics, and any other one science subject.

-Admission into 2-year Ordinary National Diploma (OND) - at least four O'L subjects obtained at credit level passes at not more than two sittings, including English, Maths and Physics.

-An abridged 1-year Industrial Training after OND before the final 2-year HND program.

-Postgraduate studies (M.Sc. & PhD) Degrees in construction management, building services, project management, construction technology, facilities management in ABU, Zaria, UniLag, Unijos, Nnamdi Azikiwe Uni. Awka, etc.

-Professional level (MNIOB & R. Builder), the graduate is placed in his category and is required to fulfill a number of academic requirements, pass prescribed exams, logbook, submit bound project report, interviews before qualifying.

-Mandatory life-long or continuous professional development (MCPD) platform -conferences, seminars and workshops (NIOB, 2012).

-Core courses - measurement of building works & services, measurement of civil & heavy engineering works, construction technology, tendering, estimating & price analysis, project cost control, building maintenance, project management, information technology, professional practice & procedures, contract law and arbitration.

BSc. program duration - 5-year

-Admission requirement – at least five O' level credit passes obtainable in not more than two sittings from either NECO, WASCE, GCE, NABTEB or its approved equivalent. Three of the five subjects must include English, Mathematics and Physics.

-Admission into 2-year OND - at least four O'L subjects obtained at credit level passes at not more than two sittings, three of which must be in English, Maths and Physics, and any other science subject.

-An abridged 1-year Industrial Training before the 2-year HND program.

-Postgraduate studies (M.Sc. & PhD) Degrees being proposed in Building Economics and Project Finance.

-Professional level (MNIQS & RQS), the graduate is placed in his category and is required to fulfill a number of academic requirements, pass prescribed examinations, logbook and interviews before qualifying.

-Mandatory life-long or MCPD platform - conferences, seminars, etc. (NIQS 2012)

RESEARCH METHODS

Primary and secondary sources were utilized to gather data and information. The primary data were obtained from the NIOB & CORBON and NIQS & QSRBN as well as interviews conducted and the secondary data from reviewed literatures on related subject matter. The primary sources of information are reliable because they form the core publications and registered practitioners of the concerned professional bodies. The primary data sort and collected are the list of qualified registered Builders and Quantity surveyors usually updated and published from time to time

by these institutions. The study also deployed the use of interview to sample opinions of respected, experienced and practicing members including graduates of each of the two professional bodies. Others are publications from the National Population Commission (NPC) and National Bureau of Statistics (NBS) which also publish demographic data and economic development status of the country. It is these data that were analyzed and presented in tables, frequencies, graphs and percentages in this study for the purpose of establishing the contributions of the two professional bodies towards the development of sustainable CI in Nigeria in line with their statutory mandates.

PRESENTATION OF RESULTS

Table 4.1: Showing the distribution of builders and quantity surveyors in Nigeria according to state, population and Local Government Areas (LGAs)

NOS	STATES	POPULATION	% OF THE NATION	LGAs	RPBs MNIOB	BUILDERS 'RCFS	RQS MNIQS	Q. SURV . RCFS
1.	ABIA	2,833,999	2.02	17	24	1	18	-
2.	ADAMAWA	3,168,101	2.26	21	8	-	9	1
3.	AKWA IBOM	3,920,208	2.80	31	12	2	59	3
4.	ANAMBRA	4,182,032	2.99	21	36	1	27	3
5.	BAUCHI	4,676,465	3.34	20	24	-	23	1
6.	BAYELSA	1,703,358	1.22	08	13	-	13	-
7.	BENUE	4,219,244	3.01	23	23	-	06	-
8.	BORNO	4,151,193	2.97	27	21	-	06	3
9.	CROSS RIVER	2,888,966	2.06	18	9	1	28	2
10.	DELTA	4,098,391	2.93	25	14	1	52	5
11.	EBONYI	2,173,501	1.55	13	6	-	08	-
12.	EDO	3,218,332	2.30	18	26	1	77	2
13.	EKITI	2,384,212	1.70	16	54	-	33	-
14.	ENUGU	3,257,298	2.33	17	13	-	74	9
15.	FCT	1,405,201	1.00	06	359	9	681	45
16.	GOMBE	2,353,879	1.68	11	18	1	17	2
17.	IMO	3,934,899	2.81	27	21	2	42	6
18.	JIGAWA	4,348,649	3.11	27	01	-	01	-
19.	KADUNA	6,066,562	4.33	23	53	1	111	32
20.	KANO	9,383,682	6.70	44	24	-	65	6
21.	KATSINA	5,792,578	4.14	34	6	1	17	2
22.	KEBBI	3,238,628	2.31	21	25	-	02	-
23.	KOGI	3,258,487	2.33	21	12	-	06	1
24.	KWARA	2,371,089	1.69	16	20	-	48	7
25.	LAGOS	9,013,534	6.44	20	553	12	1175	73
26.	NASARAWA	1,863,275	1.33	13	14	-	-	-
27.	NIGER	3,950,249	2.82	25	32	-	61	1
28.	OGUN	3,658,098	2.61	20	69	-	39	2
29.	ONDO	3,441,024	2.46	18	25	-	60	2
30.	OSUN	3,423,535	2.45	30	48	1	31	-
31.	OYO	5,591,589	3.99	33	60	-	74	6
32.	PLATEAU	3,178,712	2.27	17	40	1	34	3
33.	RIVERS	5,185,400	3.70	23	23	02	117	16
34.	SOKOTO	3,696,999	2.64	23	05	01	06	-
35.	TARABA	2,300,736	1.64	16	04	-	02	-
36.	YOBE	2,321,591	1.66	17	09	-	01	-
39.	NOT PLACED	-	-	-	01	-	418	-
40.	OVERSEAS	-	-	-	-	-	22	-
	TOTAL	140,003,542	100%	774	1708	38	3469	233

Source: NPC, 2006; NIQS, 2015 and Field Survey, 2015 RPBs – Registered Professional Builders; Builders RCFs; Builders Registered Consultancy Firms; RQS – Registered corporate members of NIQS; Q. Surveyor's RCFs; QS Registered Consultancy Firms.

Table 4. 2: Showing the distribution of builders in the six geo-political zones according to the number of states, population and LGAs in Nigeria

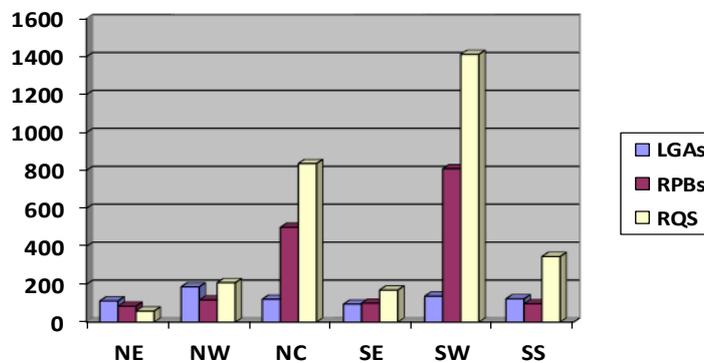
NOS	GPZs	STATES AND NAMES	POPULATION	%of the Nation	LGA	RPBs	RCBs	RQS	RCQS
1.	NORTH-EAST (NE)	SIX STATES - Adamawa, Bauchi, Borno, Gombe, Taraba and Yobe	18,971,965	13.55%	112	84	01	58	07
2.	NORTH-WEST (NW)	SEVEN STATES - Jigawa, Kaduna, Kano, Katsina, Kebbi, Sokoto & Zamfara	35,786,944	25.56%	186	117	03	208	40
3.	NORTH-CENTRAL (NC) & FCT	SIX STATES & FCT - Benue, FCT, Plateau, Niger, Kogi, Kwara & Nasarawa	18,841,056	13.46%	121	500	09	836	57
4.	SOUTH-EAST (NE)	FIVE STATES- Abia, Imo, Anambra, Ebonyi & Enugu	16,381,729	11.70%	95	100	4	169	18
5.	SOUTH-WEST (SW)	SIX STATES- Oyo, Ekiti, Lagos, Ogun, Ondo & Osun	27,511,992	19.65%	137	809	13	141 2	83
6.	SOUTH-SOUTH (SS)	SIX STATES - Bayelsa, Akwa-Ibom, Rivers C. River, Delta, & Edo	21,014,655	15.01%	123	97	7	346	28
7.	Overseas	-	-	-	-	-	-	22	-
8.	Not Placed	-	-	-	-	01	-	418	-
	TOTAL	37 STATES & FCT	140,003,542	100%	774	1707	37	346 9	233

Sources: NPC, 2015; NIQS, 2015 and Authors Field Survey, 2015 RPBs – Registered professional builders; RCB – Registered consultant builders; RQS – Registered quantity surveyors; RCQS – Registered consultant quantity surveyors

DISCUSSION OF RESULTS

Results obtained in Table 4.1 showed the 37 States of the Federation including Abuja, the FCT. A row was created in Table 4.1 to identify qualified builders (01) and quantity surveyors (418) whose addresses and locations could not be identified at the time of this study. An additional row was created to highlight the number of RQS (418) who are overseas. Further, the result in Table 4.1 shows that the highest number of RPBs & RCBs obtained were (553) & (12), and (1,175) & (73) for RQS & RCQS, respectively in Lagos State. FCT, Abuja was the second highest with (359) & (09) RPBs & RCBs and (681) & (45) for RQS & RCQS respectively, and the third highest number of RPBs and RCBs with (69) & (00) respectively was in Ogun State whereas, that for RQS and RCQS was in Rivers State with (117) & (16) respectively. Further, it was observed from the results shown in Table 4.1 that out of the total (37) states in Nigeria including the FCT, (20) states did not produce any RCF in the building profession. The result obtained for the first and second highest positions respectively was not unexpected because it is an indication that these States, Lagos and FCT, engaged in the provisioning of high capital projects such as residential & office buildings, factories, warehouses, roads, among others in Nigeria. The third highest (for RPBs) was recorded in Ogun State which

is believed to host the highest number of tertiary institutions (at least 13 federal, state and private universities) in Nigeria. This may indicate that many construction activities also thrive in that state necessitating the engagement of the services of the RPBs in their physical planning and works departments as well as a number of lecturers in these professions in these identified institutions. The lowest number of RPBs & RCFs with (01) & (00) values, respectively was Jigawa State, whereas, the lowest for RQSS (01) & RCFs (00) respectively are Jigawa & Yobe States. The implications are that there would be very low level of construction activities and infrastructural provisioning in these States, which by extension would result in under-employment of these professionals in these areas. This line of thought of low infrastructural provisioning may equally be explained for maintenance activities in the same direction in these states.



NE – North East; NW –North West; NC –North Central; SE –South East; SW – South West; SS –South South
 FIGURE 5.1: Comparing The No. of RPBs and RQS Across The GPZ and Their LGAs

However, noteworthy from the result in Table 4.1 is the fact that in all the thirty-seven states of the Federation there is at least a RPB when compared to QS (0) in Nasarawa State. Notable also is the fact that a high number of States (20) representing 54% of the (37) States of the Federation does not engage the services of any builder’s RCF. Paradoxically, even a most populated state as Kano with well over nine million population does not have a single builder’s RCF to meet the state’s capital project investment needs as against QS with (6) RCFs. The result of such act would be poor planning, supervision, workmanship, production management among others in the planning and execution of construction projects as well as high level of unemployment of professional builders in these States. Similar scenario is applicable to the QS profession where about twelve States do not have registered consultancy firms. Generally, the number of professional builder’s RCF (38) and quantity surveyors RCQS (233) recorded across Nigeria with an estimated population of over 160 million is a big challenge to CORBON, QSRBN, and Nigeria in general. It is notable in Table 4.2 that Nigeria is divided into six Geo-Political Zones (GPZ) comprising of SW with six States and accounted for (19.65%) of the Nation’s population produced the highest number of RPBs (809) and (13) RCFs and RQS (1,412) & (83) RCQSs; NE with six States

and (112) LGAs accounted for 13.55% of the Nation's population produced the least number of RPBs of (84) & (01) RCF and (58) & (07) RQS & RCFs respectively. Similarly, in Figure 5.1 which was used to compare the distribution of the two professions across the GPZ and their LGAs, the results obtained indicated that SW zone produced the highest number of RPBs (809) and RQS (1,412) respectively. NC was 2nd highest with RPBs (500) & RQS (836) whereas NE zone produced the lowest number of RPBs with (84) & RQS (58) respectively.

Benchmark of the professionals to population

As indicated earlier in this study, there is dearth of data on established ratio of one professional to the population it could serve. It was thus hypothesized in literature that, at least four builders and two QS, respectively, would be needed to provide services to a single large scale project. If these hypothesis is upheld, then obviously it could be assumed that the two professions are in short supply therefore, the professional bodies and other stakeholders in the CI must have to devise effective and strategic means of producing more members of their respective professions to the society if their contributions towards enhancing the development of sustainable construction industry in Nigeria would be significant.

Challenges confronting these professions

A number of challenges confront the professional bodies in the discharge of their mandates. According to the QSRBN, (2011) in the last few years or decade, the quantity surveying profession has witnessed great changes and metamorphoses. This owes largely to pressures exerted by globalization with competitiveness and competition as hallmark. The value-chain in the professional services sector is getting more refined and complex for the simple everyday tool to grasp. This is for all professions and it is more profound for the profession of quantity surveying. Other results extracted from some of the highly placed, experienced and respected professionals in these two fields in active practice including renowned professors interviewed in Lagos and some other parts of the country indicates that poor patronage by government at all levels, low turnout of students who choose the professions through JAMB admissions, the poor or lack of implementation of the National Building Code, poor recognition of their services by the clients, duplication of functions by other professionals in the built environment and under-employment of qualified ones are among the challenges confronting them. It may be acknowledged that some of the registered and registerable members of these two professions sampled and interviewed on the challenges confronting the abysmal rate of turnout of graduates from school into the professions, exerts that, the professional bodies on the other hand make it difficult for candidates to pass through the qualifying examinations successfully in one sitting through their stringent rules and requirements.

CONCLUSION

The building and quantity surveying professions are amongst the major stakeholders working towards the development of sustainable construction industry in Nigeria. They were statutorily empowered to practice in this direction by the Federal Government of Nigeria. The results obtained from this study indicated that there is a correlation between these two professions and sustainable construction industry. For a construction industry to thrive and sustain its desired GDP growth, all stakeholders, and government at all levels must resolve to encourage mass mobilization of resources through their capital budgets into physical provisioning of construction projects and infrastructures regularly. This action would encourage the private sector to thrive by investing in the provision of buildings and other related products that enhance business.

The results obtained in Tables 4.11 and 4.2, respectively indicated that the States with the highest population and LGAs did not produce the highest number of RPB and RQS or CFs, but rather revealed the low level of provisioning of construction products.

The results further indicated that the number of fully qualified RPB (MNIQB & R. Bldr) and QS (MNIQS & RQS) produced by CORBON and QSRBN respectively in Nigeria is low when compared to the population of over 140,003,542 (NPC, 2006) or 170million estimated figure of people they serve or the number of on-going or proposed projects across the country. These professionals are required in large numbers to render services in various organizations such as in the Federal, State, LGAs civil service & parastatals, local and foreign construction firms, corporate organizations, tertiary institutions, individuals among others. It is believed that if all States are to enjoy equal benefits in terms of infrastructural provisioning the number of these professional builders and QS recorded in a State like Lagos should also be the minimum number required across other States of the Federation, and if this hypothesis is upheld, then, Nigeria is in shortfall of these professionals. The implications of the shortfall to Nigeria include inter alia poor planning, supervision, production management, workmanship, financial management and project management of construction projects. Others include project abandonment, building failures and eventual collapse and high level of quackery and unemployment of professional builders and QS. The abysmal number of RPBs (1708) and RQs (3469) or their RCFs (38 and 233), respectively as shown in Tables 4.1 & 4.2, respectively may be an indication that CORBON and QSRBN platforms for admitting members as well as registering consultancy firms are stringent and unattractive and or that, because there is low patronage, potential candidates including those qualified to establish their own firms are discouraged. Therefore, in order to bridge this shortfall gap indicated in the two professions, their professional bodies, Government at all levels as well as CI stakeholders must work assiduously in cohesion if the sustainable development goal of the CI would be realized with significant contributions from the two professions in Nigeria.

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