

ENRICHING QUANTITY SURVEYING CURRICULUM FOR LEADERSHIP IN THE BUILT ENVIRONMENT

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ABSTRACT

The changing structure of the Built Environment, necessitates that contemporary and future Quantity Surveyors (QS) play a leading role in service delivery in order to gain competitive advantage. The study examined factors responsible for the need to enrich quantity surveying curriculum for leadership in the Nigerian Built Environment. This was achieved through the following objectives: examination of the factors that pose challenge to QS role visibility; and examination of the extent to which both traditional and multidisciplinary services curriculum of QS requires enrichment for leadership in the Built Environment. The study adopted a survey design with a population of 450 quantity surveyors obtained by a random selection of twelve (12) quantity surveyors from each of the 36 states of the federation, and eighteen (18) from the federal capital territory, Abuja. The research instruments were a structured questionnaire. 387 structured questionnaires were validly completed and returned out of 450 administered, implying 86% response rate. The findings revealed a 'low public awareness of Qs professional services'; while enrichment of curriculum on 'financial reporting', and 'privatization/commercialization' respectively ranked the most for traditional and multidisciplinary service innovation. The study concludes that improved knowledge and quality of QS services determines its visibility, competitiveness, and leadership in the BE industry. The study recommends improvement of the present low public awareness of Qs professional services, enrichment of current traditional and multidisciplinary service curriculum, especially in the areas of financial reporting, and privatization/commercialization.

Keywords: Built Environment, Curriculum, Enriching, Leadership, Quantity Surveying

INTRODUCTION

Contemporary construction industry business model propels clients to demand for completion within schedule, budget, quality, reliability, safety, and other predetermined project performance benchmarks. As such, globalization places a burden on built environment industry professions to continuously upscale the quality and broaden the scope of their professional services in order to meet contemporary demands of employers, construction financiers, civil society/end-users, and industry stakeholders in a manner that assures maximum value for money. Aside the built environment, organizations in other sectors of the national economy are also under increasing pressure to offer value added services, and must continue to innovate in their areas of economic endeavor. Business enterprises are also under threat from their competitors to continually offer superior and more comprehensive services to customer's ever-changing needs as a global strategy; else,

they structurally take the back seat and glide their way into extinction. As such, they must learn to survive and grow in the face of increased competition and rapid change.

The changing structure of the built environment in which quantity surveying profession belong is predicated on the fact that contemporary as well as future practitioners must be prepared to play a leading role in all facets of their professional practice, as doing so is the only way they can gain competitive advantage through superior service offering to their clients, more so, at this time of interdisciplinary convergence. Quantity surveying is a global profession that provides services across various industries. Quantity Surveyors are involved in all the phases of a facilities lifecycle such as feasibility, design, construction, extension, refurbishment, maintenance, and demolition (Olanrewaju & Anahve, 2015). The nations' quantity surveying practitioners must be proactive to provide cutting-edge leadership in all aspects of their traditional professional service offerings as well as multidisciplinary service areas since other built environment professionals also compete to undertake the same services. The services should essentially be rendered in a manner that distinctively places Quantity surveyors as built environment industry pacesetters, rather than competitors.

The value quantity surveyors deliver depends on their market profile with regards to the quantity, quality (skills and competences), availability, pricing, value addition potential and competitiveness of services within the built environment professions. The quality of the offerings determines her industry rating, brand image, service acceptability, global marketability, and competitiveness among best of class. According to measuremanage.com.au (2020), a Quantity Surveyor is a valuable resource for any construction project that requires timely delivery at minimal expenses, as the effectiveness of projects lie in the proper use of its resources with minimum possible expenses. Quantity surveying professionals have specialized skills and competences for knowledge leadership in the construction industry (Yeshwanth, 2020).

Statement of the Problem

A large segment of the general public is often not aware of the role played by Quantity Surveyors in the entire project procurement and delivery chain. Quite a number of times, Qs have been approached by some persons, even by the elite community to describe their role, and in some occasions to explain the difference between a QS, an Estate surveyor, or a Land surveyor. In many projects Quantity Surveyors have been severally referred by the site workmen as 'Architect' or 'Engineer'. The situation is often made worse when the employer refers to every skilled manpower at the site as either an 'engineer' or an 'architect'. A random casual visit to schools at all levels-primary, secondary, and tertiary hardly have the pupils and students heard of 'quantity surveying', 'quantity surveyor', except a few, whose parents or relations are one. For those in this latter category, hardly do they know the role quantity surveyors perform. In general, the students or persons are comparatively more familiar with the other built environment professionals like – architects, engineers, land surveyors and could even go further to mention persons they know that are practicing those fields. The low visibility of the Quantity Surveyor in the built environment creates problem to their early appointment into project teams as other participants often take advantage of the apparently poor knowledge of clients on the services/roles of quantity surveyors and the value they add on projects. This practice gives room for usurpation of role by other members of the built environment in their desire for

dominance and leadership, as such, they publicly portray the QS as ‘an appendage or at best, a cost service subsidiary advisor to the other built environment consultants in a bid to mask her direct patronage by clients and other stakeholders in what seems to be a conspiracy. The implications of these unfortunate perceptions or practices result in a widening gap of QS service visibility by clients and other project procurement stakeholders. The effects of gap in QS service visibility is simply fatal, as her role in the total cost management of the nation’s vast infrastructures cannot be fully harnessed for national development. The foregoing background report obviously creates a huge challenge for the Nigerian Quantity Surveyor in her quest for leadership in the built environment industry. Arising therefrom, this study aims at examining factors responsible for the need to enrich quantity surveying curriculum for leadership in Nigerian Built Environment.

Objectives of Study

1. To examine the factors that pose challenge to QS role visibility
2. To examine the extent to which both traditional and multidisciplinary services curriculum of QS requires enrichment for leadership in the built environment.

Historical perspectives of Quantity surveying in BE industry

QS assumption of leadership among built environment contemporaries is a daunting and onerous task that is fraught with several challenges of which some have a medieval origin. The profession of quantity surveying is dated back to the Egyptian civilization in which dedicated personnel were deployed for costing of magnificent structures. It is believed to have transformed into a profession around the 17th century restoration of London, after the great fire (Yeshwanth, 2020). In 1836, Quantity Surveying emerged as a new age profession when the new Houses of Parliament of Great Britain, designed by Sir Charles Barry, turned into the first public contract to be completely measured and tendered utilizing Bills of Quantities. Projects like the ‘Egyptian Pyramid’, and one of the seven Wonders of the World, which today stands as the ‘hallmark of Egyptian civilization’ historically date back to 2550BC. Also, ‘Taj Mahal’, another wonder of the world which dates back to the period 1626-1648AD. In spite of the enormous human resources employed on both landmark projects numbering about 20,000 persons, there was no specific mention of QS involvement among the somewhat casual listing of specialists that were engaged in the erection of these spectacular edifices.

Most Built environment industry projects were up till 1900, generally managed by certain industry professionals who subsumed the role of quantity surveyors, comprising architects, engineers, and master builders. The projects included those of Vitruvius (first century BC), Christopher Wren (1632-1724), and Thomas Telford (1757-1834). The non-inclusion of quantity surveyors in the roll call of the aforementioned projects seemed to indicate the origin of Qs relegation to the background at an early stage of human and economic development history. The quantity surveyor eventually emerged into the built environment landscape as an independent field through the aegis of the master builders who needed to provide cost services on demand by their growing clientele. Thus, the later arrival of the Quantity Surveying profession vis-à-vis other earlier recognized professions like Architecture, Building, Civil Engineering, Land Surveying, Estate Management, Urban and Regional planning, in the historical landscape of the built environment industry has

continued to create an identity crisis in the quest and power tussle for leadership. Until date, certain clients appoint quantity surveyors late in their contract procurements. As such, most of her roles are undertaken at rush hours often involving late working and immense pressure to meet assigned timelines especially during the pre-contract stages. These, among several others, pose immense inhibition to the early engagement of quantity surveyors in built environment services talk less of her stand-alone recognition as 'leader'. The role of leadership in the built environment industry is a challenge the Quantity Surveyor, must vigorously pursue, overtake and occupy for her to reverse the hand of history. This can be achieved by an aggressive skill marketing strategy that aims at improving her overall visibility in the built environment space based on proven capacity to provide value-driven traditional and multidisciplinary services in the BE space. Multidisciplinary services by their nature, cut across other built environment professions and could as well be rendered by them. The capacity to provide superior services must be coupled with a sustainable innovation and best practice policy. This is the only way the QS can lead and sustain leadership. Thus, the recent formal approval by the Nigerian Institute of Quantity Surveyors of the use of the prefix 'Qs' by all fully registered quantity surveyors, to be specific with effect from 28th April, 2017 is a step in the right direction in the ardent desire to improve QS professional service visibility, assert her relevance and forcefully enforce her role as a major stakeholder in the BE industry, more so, when her competitors for service leadership in the sector had long embraced this practice. You can only lead when you are visible and not when operating from position of obscurity.

The Private Public Partnership (PPP) procurement route has increased the potentials and relevance of the quantity surveyors towards best service delivery (Olanrewaju & Anahve, 2015).

Global review on the prospects and challenges of Quantity Surveying profession

The advent of information technology and the potential it offered, coupled with the downturn in construction activity in the UK and a number of other countries during the mid-1980s and late 1990s, gave rise to a more intense competition in the construction industry with firms seeking opportunities beyond their professional domains. Many recent scandals show that the business world faces corporate malfeasances and ethical transgressions (Mehta, 2003; Manz, Anand, Joshi, & Manz, 2008). Unethical leaders have been able to exploit the loopholes in management systems to fulfill their personal desires (Schaubroeck, Walumbwa, Ganster, & Kepes, 2007). This, led many observers to predict, and many within the profession to fear, that quantity surveying might disappear as a formal profession (Toor & Ofori, 2008). Cartlidge (2006) study however rekindled hope within the profession and noted that there was a severe shortage of quantity surveyors and cited the result of the survey of the Royal Bank of Scotland which found that quantity surveyors were the best paid graduate professionals in 2005. The reasons for the rise of fortune within the profession included an increase in the volume of construction activity, and the rising demand for experts in cost engineering and financial management.

Many clients are also becoming more knowledgeable and hence more demanding and selective in what they want from consultants and to whom they award the work (Preece, Moodley, & Smith, 2003). This assertion was corroborated by Songer, *et.al* (2006) study which stated that 'there is lack of quality people to undertake huge amount of professional services in the built environment industry'.

There have been a call wake-up for greater focus on how project procurement processes can be improved (Kumaraswamy & Dulaimi, 2002), how the level of professionalism in the industry can be enhanced (Vee & Skitmore, 2003); how corruption in the industry can be eradicated (Stansbury, 2005; Transparency International, 2006); and how to attract, retain, and develop talent (Toor & Ofori, 2008). Recent studies show that quantity surveyors have generally expanded on the nature and scope of services they now provide (Olanrewaju & Anavhe, 2008; Ashworth, 2010; Cartlidge, 2011). In Nigeria, quantity surveying profession is practiced to a great extent along the same pattern as in the United Kingdom and other common wealth countries. In the Americas, they are referred to as Cost Engineers. QS functions are also carried out in other nations of the world under a variety of names including-cost engineering, construction economics, building economics, infrastructure development economics, project cost management, total cost management, etc. In spite of difference in nomenclature, the roles of QSs are universal globally (NIQS, 1998). The Regulated and other Professions (Miscellaneous Provisions) Act, 1978 recognized Quantity Surveying profession as one of the scheduled professions, while Decree No. 31 of 1986 gave it legal backing and recognition, and further set-up the Quantity Surveyors Registration Board of Nigeria (QSRBN) by Act of 1986 (Now, CAP Q1 LFN, 2004) as an agency of the Federal Government responsible for the registration, regulation, control, administration, discipline etc., within the quantity surveying profession in Nigeria. The duties of a QS can be broadly classified into two namely-specific (traditional) and shared (multidisciplinary) services.

The Qs duties is a necessary rallying point for all other members of the design and construction team including the client, despite his rare appointment as lead or prime consultant under the traditional procurement system (Ashworth, 2010; Towey, 2012; Ashworth, Hogg & Higgs, 2013; Olanrewaju & Anahve, 2015). Disparities arising from educational gap and work culture constitute major challenges towards Qs appointment in building engineering services procurement (Olanrewaju & Anahve, 2015).

Highlights of traditional & multidisciplinary roles of Quantity Surveyors

Traditionally, the activities of professional quantity surveyors are concerned with contracts, measurement, cost planning and cost control of construction projects. Quantity surveyors' culture of accountability, transparency, elasticity, coupled with clients' ever-changing needs have necessitated a diversification of Qs traditional service offerings into other sectors like- agriculture, manufacturing, mining, telecommunication, automobile, transport, shipping, petrochemical, etc.

The methods they employ cover a range of processes including but not limited to cost planning, value engineering, value management, feasibility studies, cost benefit analysis, life-cycle costing, risk analysis, tendering, valuation, change control, dispute resolution, claims management, project management, cost estimation and value for money assessments (Olanrewaju & Anahve, 2015).

Yeshwanth (2020) outlines the principal services rendered by quantity surveyors or quantity surveying firms across the globe as follows:

1. Preliminary Cost Advice
2. Cost Planning
3. Feasibility Estimates
4. Advice on Selection of Consultants & Contractors
5. Preparing of Tender Documents
6. Advising on Contractual Methods

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|------------------------------------|----------------------------|
| 7. Evaluation of Construction Work | 10. Tax Deduction Services |
| 8. Project Management Services | 11. Technical Auditing |
| 9. Periodic Financial Reporting | 12. Feasibility Estimates |

Studies have also revealed an increase in the following modern services rendered by quantity surveyors:

1. Asset Advisory
2. Facilities Consultancy
3. Building Surveying
4. Due diligence
5. Litigation support
6. Risk Mitigation
7. Property taxation

Generally, the traditional and multidisciplinary roles of quantity surveyors include but not limited to the following:

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| i. Cost Management of Projects | xix. Cost Studies and Cost Planning of Capital projects |
| ii. Construction Cost Modelling | xx. Construction Management |
| iii. Construction Procurement | xxi. Project Cost Control |
| iv. Contract Administration and Management | xxii. Commercial Management of construction projects |
| v. Capital Project Monitoring | xxiii. Civil Engineering projects - roads, railways, bridges, dams, wharves, seawalls, Jetties, etc (Construction, Measurement and Economic studies) |
| vi. Capital Expenditure Management | xxiv. Oil & Gas industry projects (downstream and upstream)- Construction, Measurement and Economic studies |
| vii. Feasibility Studies of Capital projects | xxv. Mechanical and Electrical Engineering (M&E)- Construction, Measurement and Economic studies |
| viii. Direct Labour Project Cost Management | xxvi. Construction Contract Law |
| ix. Project Management | xxvii. Alternative Dispute Resolution (ADR) |
| x. Programme Management | xxviii. Expert witness |
| xi. Facility Management | |
| xii. Value management | |
| xiii. Risk Management | |
| xiv. Contract Auditing | |
| xv. Development Planning and Appraisal | |
| xvi. Fire Insurance of Capital Projects | |
| xvii. Estimating | |
| xviii. Cash flow planning and analysis | |

Ideally, Qs services are required in all phases of the construction process namely, viz: pre-construction phase, design phase, tendering phase, tender selection & appraisal phase, construction phase, and the post construction phase.

According to Yeshwanth (2020), 'the exact role of a QS cannot be defined in a confined way because of day to day changing requirements in the construction industry'. Qs also seek to play a vital role in multi-disciplinary services resultant from the changing needs of

the industry and need to be involved in both the downstream and upstream sides in the construction supply chain market in order to provide value added services (Olanrewaju & Anahve , 2015; Yeshwanth ,2020).

Overview of Quantity Surveyors' Skill Set for Value-driven performance

Olanrewaju & Anahve (2015) posits a need for value added tools, skills, and expertise for quantity surveyors to remain competitive. Akintoye (2001) citing Connaughton declared that 'much of the core skills of the Quantity Surveyor is borrowed from disciplines like-geography, mathematics, economics, finance, management, law, etc. Contemporary skills of Quantity surveyors also include - numerical skills, problem solving ability, analytical and data interpretation skills, teamwork and interpersonal skills, ability for independent working, written and verbal communication skills, presentation skills, information technology and digital literacy skills, negotiation skills, and attention to details and methodical skills. Thus, the unique nature of Quantity Surveying profession is the combination of these diverse knowledge and skills in the context of construction. The above scope of specific and general duties are areas in which the Nigerian Quantity Surveyor can competently exhibit skill and showcase superior ability and take-up an unequaled, incontestable leadership within the built environment considering the peculiarity of her training and diversified background. The changes in the construction industry discussed above pose a number of to all who work in it. They particularly offer tremendous business opportunities and avenues for greater achievement from the perspective of the quantity surveying profession. Harun and Torrance (2006) suggest that quantity surveyors should not contain themselves within the traditional boundaries of cost management; they need to develop new niches, cultivate new knowledge and break into new areas in order to enhance their competitiveness. Smith (2004) suggests that there is some uncertainty about the capacity in which, and for whom, the quantity surveyors would work, and the nature of quantity surveying firms in the future. Brummer (2004) suggests that quantity surveyors should play a more effective and proactive role across all stages of the project life cycle and draws attention to constantly changing procurement systems, necessitating refinement in the services that quantity surveyors offer. Olanrewaju & Anahve (2015) observed that quantity surveyors usually offer their service when major design decisions have been made. Their study on the appointment of the quantity surveyors showed that only 21% of the appointments are based on their self-recognition, otherwise they are engaged based on advice of architects (39%), engineers (11%), projects managers (22%) and others (6%). This statistic alludes to their low visibility. The implication is that quantity surveyors would be unable to provide strategic roles on the project if appointed at later stages. Grant (2004) proposes that the Quantity Surveyors should diversify their domain of expertise and strengthen the bases of their strategic assets such as education, training, experience and knowledge. Professional development is primarily aimed at promoting growth within the body of knowledge of a profession. It involves building on previous efforts to emancipate a profession, moving from the present unsatisfactory position to a preferred one that provides a better and more robust opportunity by making a greater impact, and establishing superior intellectual and professional leadership among best of class (Adindu & Ofoegbu, 2014). The adoption of business competitive strategy is imperative for quantity surveying profession to subdue the growing rate of role interference, usurpation in the traditional services, and to survive the stiff competition and lobbying for service patronage that characterize the multidisciplinary services. Competitive strategy is about being different

and rendering superior performance. The essence of strategy in business activities is choosing to perform activities differently from rivals (Chase, Aquilano & Jacobs, 2001). The fundamental theory is that for any service or product organization to be of world class rating, it must recognize that its ability to compete in the market it serves depends on developing an operations strategy that is properly aligned with its mission of serving the customer. A company's competitiveness refers to its relative position in comparison to other firms in the local or global market place. The major competitive dimensions for which firms and organizations seek competitive positions include-cost leadership, product/service quality, reliability leadership, and delivery speed leadership (Chase, *et.al*, 2001). Thus, for the QS to achieve leadership in the built environment landscape, she must improve her role visibility and sub-sectoral skills and competences for competitive advantage and leadership in the built environment industry through service innovation. Literature on construction industry innovation distinguishes between several different kinds of technological and process innovations (Winch, 1998). The innovation strategy would have to involve a long-term deliberate policy that must bring about desired change for built environment leadership by the QS. Rates of innovation generation and innovation adoption are difficult to compare because definitions are diverse and the apparent difficulty in distinctively identifying individual innovations in an ongoing development process. Glaringly, some areas of built environment activity are more visible than others and therefore better understood. Ivory (2005) reports the tendency of Architects in particular, to innovate beyond the scope of the original client requirements and operate from their own agenda. Such innovations are certainly noticed but their contribution to the success of the project will not always be a positive one. On the other hand, process innovations of the kind that quantity surveyors are likely to introduce may go unnoticed by other participants not directly affected. Architects and Engineers often display their Architectural and Engineering drawings for all to appreciate and criticize their expertise on a development project. Same cannot be said of the QS Cost Plan, Preliminary Estimate of Cost, Bidding document (BOQ), tender documents, Variation Claim documents, Fluctuation Claim Documents, Interim Valuation, Financial Statements, and Final Accounts, Post Contract Auditing, among several other roles. Most of the QS's roles are of a 'strict and confidential' nature and involve documents of a largely restricted use. Professional ethics of most QS services often demand the highest level of confidentiality in a bid to protect the client and other project stakeholders from exploitation and economic fraud, by way of bloated contracts, over-invoicing, resources mis-use, wastage, and other forms of mis-management of project resources. These services are rendered in the best interest of the society and the nation at large. Another obvious impediment to the Quantity Surveyors visibility is their lack of advertising of any kind. Quantity Surveyors do not advertise their service offerings be it in the print or electronic media. Their office locations do not often display notice or signboards talk less of showcasing their services. As, such, their existence is only brought to a public notice when they have projects that require use of consultants' name boards. The lack of public advertisement of services as a marketing strategy is a major setback on QS visibility in the built environment industry.

Thus, contemporary description of a Quantity surveyor includes- an auditor, facilitator, leader, manager, an innovative and dynamic stakeholder of an infrastructure development chain. Modern Quantity Surveying is viewed as a multi- disciplinary practice that aims at achieving optimum economic output and value for money (Yeshwanth, 2020). Quantity

surveyors must possess an in-depth knowledge of required job offerings for them to render value-based services to clients and other project stakeholders.

RESEARCH METHODOLOGY

The study adopted a survey design with a population of 450 quantity surveyors chosen from the academia, consultancy practices, clients' organizations, and contracting firms obtained by a random selection of twelve (12) quantity surveyors from each of the 36 states of the federation, and eighteen (18) from the federal capital territory, Abuja. The research instruments were a structured questionnaire. 387 structured questionnaires were validly completed and returned out of 450 administered, implying 86% response rate. This, in the view of the researchers was considered adequate for purposes of this study especially with respect to data representativeness. Cronbach Alpha test conducted for the reliability of research instrument yielded 0.925 value. The study analysis was carried out with the aid of average relative index (ARI) as per Olanrewaju & Anahve (2015) study.

$$ARI = \frac{\sum_{i=0}^5 a_i x_i}{5 \sum_{i=0}^5 x_i} \quad (0 \leq ARI \leq 1) \quad (1)$$

Where a_i is the index of a group; a constant expressing the weight given to the group; x_i is the frequency of response; $i = 1, 2, 3, 4, 5$, x_1, x_2, x_3, x_4, x_5 , are the frequencies of the response corresponding to $a_1=1, a_2=2, a_3=3, a_4=4, a_5=5$, respectively. As such, for purposes of interpretation, 0 (zero) is the lowest possible score, whereas, 1 (one) is the highest possible score. ARI values closer to 1, indicate higher extent of respondent's agreement on variable factors under measure. Thus, the higher the cumulative weighted total (CWT), the higher the average relative index (ARI), and the higher the strength of agreement among respondents on the identified variable factor. For this study, ARI values of 0.700 and above are considered the most critical, as such, require prompt managerial action. The more the ARI values tend towards 1.000 (maximum value for a perfect agreement), the greater the effect of the variable factor on the construct measured.

RESULTS AND DISCUSSION

The results in Table.1 on the factors that pose challenge in QS role visibility for leadership in the Built Environment, show that 'low public awareness of Qs services' has the highest ARI value of 0.825 and ranked 1st, implying the factor poses the greatest challenge to Qs role visibility for leadership in the BE industry; followed by QS indirect appointment by clients -2nd, ARI :0.800. According to Ashworth, (2010); Towey, (2012); Ashworth, Hogg & Higgs (2013); and Olanrewaju & Anahve, (2015) 'the Qs duties is a necessary rallying point for all other members of the design and construction team including the client, despite his rare appointment as lead or prime consultant under the traditional procurement system. This assertion also corroborates the following results- indirect reporting of roles to clients -3rd, ARI:0.774; Low public awareness of Qs services -4th, ARI:0.770; and non-publicity of Qs roles- 5th, ARI: 0.750. Lack of competitiveness in the wider BE services ranked 6th, ARI:0.692, while usurpation of traditional roles by other BE professions ranked 7th, ARI: 0.668 amongst others.

Discussion of Findings: Grant (2004) proposes that the Quantity Surveyors should diversify their domain of expertise and strengthen the bases of their strategic assets such as education, training, experience and knowledge. Furthermore, Harun and Torrance (2006) suggest that quantity surveyors should not contain themselves within the traditional boundaries of cost management; they need to develop new niches, cultivate new knowledge and break into new areas in order to enhance their competitiveness. In view of the foregoing, for objective no.2, the results on table.2 below, show that ‘Financial Reporting’ has the highest ARI value of 0.815, implying that the variable factor has the most critical need for review by enriching both the academic and professional curriculum in the subject area, for Qs leadership of the BE industry. The results show also show that ‘contract auditing’ is next in the order of need to enrich academic and professional curriculum, hence an ARI value of 0.771; followed by contract documentation & tender evaluation; management of capital project expenditure; and cost modelling, with ARI values of 0.760, 0.722, and 0.703 respectively. Enriching Qs traditional curriculum would enable her establish superior intellectual and professional leadership among best of class (Adindu & Ofoegbu, 2014).

Table 1: Factors that pose challenges in QS role visibility for leadership in the Built Environment

Enquiry code	Factors that pose challenges in QS role visibility	To a Great Extent		To a Considerable Extent		To a Moderate Extent		To a Fair Extent		To a No Extent		Cumulative Weighted Total CWT	Average Relative Index
		5	4	3	2	1							
		Freq	WT	Freq	WT	Freq	WT	Freq	WT	Freq	WT	CWT	ARI
1.1	Lack of innovation in QS roles	38	190	113	452	169	507	47	94	20	20	1263	0.652
1.2	Low Public Awareness of QS profession	66	330	217	868	85	255	19	38	0	0	1491	0.770
1.3	QS Indirect Appointment by Clients	160	800	123	492	57	171	38	76	9	9	1548	0.800
1.4	Largely Discreet Nature of QS Roles	38	190	76	304	255	765	9	18	9	9	1286	0.664
1.5	Indirect reporting of roles to client.	94	470	198	792	57	171	28	56	10	10	1499	0.774
1.6	Non-Publicity of Roles	151	755	94	376	66	198	47	94	29	29	1452	0.750
1.7	Usurpation of traditional roles by other BE Professions	57	285	94	376	161	483	75	150	0	0	1294	0.668
1.8	Irrelevance of role in BE Industry	0	0	0	0	0	0	0	0	0	0	0	0.000
1.9	Deficiency in Qs Academic/Professional training	28	140	85	340	189	567	66	132	19	19	1198	0.619
1.10	Lack of Competitiveness in the wider BE services	94	470	113	452	76	228	85	170	19	19	1339	0.692
1.11	Low Public awareness of the QS Services	151	755	170	680	38	114	19	38	9	9	1596	0.825
1.12	Process nature of Qs roles	57	285	94	376	123	369	94	188	19	19	1237	0.639

Source: Field Survey, 2019 & 2020

Table 2: Extent to which QS traditional service curriculum require enrichment for leadership in the Built Environment

Inquiry Code	Variable factors -Areas of traditional QS services curriculum	Value Label										Cumulative Weighted Total	Average Relative Index (ARI)
		To a Great Extent		To a Considerable Extent		To a Moderate Extent		To a Fair Extent		To a No Extent			
		5		4		3		2		1			
		Freq	WT	Freq	WT	Freq	WT	Freq	WT	Freq	WT		
2.1	Cost Modelling	66	330	170	680	76	228	47	94	28	28	1360	0.703
2.2	Contract Documentation & Tender Evaluation	113	565	160	640	57	171	38	76	19	19	1471	0.76
2.3	Contract Administration	38	190	85	340	151	453	76	152	37	37	1172	0.606
2.4	Contract Auditing	85	425	198	792	66	198	38	76	0	0	1491	0.771
2.5	Financial Reporting	113	565	227	908	19	57	19	38	9	9	1577	0.815
2.6	Valuation of Work done	76	380	104	416	76	228	85	170	46	46	1240	0.641
2.7	Management of capital project expenditure	94	470	142	568	85	255	38	76	28	28	1397	0.722
2.8	Expert Witness	57	285	113	452	113	339	47	94	57	57	1227	0.634

Source: Field Survey, 2019 & 2020

Table 3: Extent to which QS multidisciplinary service curriculum require enrichment for leadership in the Built Environment

Inquiry Code	Variable factors-Areas of multi-disciplinary services curriculum	Value Label										Cumulative Weighted Total (CWT)	Average Relative Index (ARI)
		To a Great Extent		To a Considerable Extent		To a Moderate Extent		To a Fair Extent		To a No Extent			
		5		4		3		2		1			
		Freq	WT	Freq	WT	Freq	WT	Freq	WT	Freq	WT		
3.1	Feasibility Studies of Capital Projects	85	425	123	492	76	228	66	132	37	37	1314	0.679
3.2	Project Management	132	660	151	604	57	171	38	76	9	9	1520	0.786
3.3	Value Management	94	470	161	644	85	255	28	56	19	19	1444	0.746
3.4	Facilities Management	161	805	95	380	47	141	47	94	37	37	1457	0.753
3.5	Technical auditing	76	380	142	568	104	312	38	76	27	27	1363	0.704
3.6	Risk Management	123	615	113	452	76	228	57	114	18	18	1427	0.738

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3.7	Privatization & Commercialization	142	710	161	644	37	111	19	38	28	28	1531	0.791
3.8	Capital Market Finance proposals	104	520	123	492	76	225	57	114	27	27	1378	0.712
3.9	Programme management	57	285	85	340	170	510	38	76	37	37	1248	0.645
3.1	Property Taxation	95	475	103	412	142	426	19	38	28	28	1379	0.713
3.11	Fire Insurance Assessment	85	425	141	564	94	282	47	94	20	20	1385	0.716
3.12	Due diligence reporting	94	470	179	716	57	171	28	56	29	29	1442	0.745

Source: Field Survey, 2019 & 2020

DISCUSSION OF FINDINGS

Studies show that quantity surveyors have generally expanded on the nature and scope of services they now provide (Olanrewaju & Anavhe, 2008; Ashworth, 2010; Cartlidge, 2011). After identifying the nature of services, the Qs need to expand the scope to align with clients' everchanging needs for services. Thus, the results in Table 3, on Extent to which QS multidisciplinary service curriculum require enrichment for leadership in the built environment shows that 'Privatization & Commercialization' recorded the highest ARI value of 0.791, implying that the variable factor has the most critical need for review or enrichment of its curriculum for Qs competitive advantage and leadership in the BE. This result is followed by the curriculum on 'Project management' with an ARI value of 0.786, Facility management- ARI:0.753, Value management -ARI: 0.746, Due diligence reporting -ARI: 0.745, Risk management- ARI: 0.738, Fire insurance assessment-ARI:0.716,Property Taxation-ARI:0.713, Capital market finance proposal ARI:0.712, and Technical auditing-ARI: 0.704. Olanrewaju & Anavhe (2015); Yeshwanth (2020), state that 'QSs also seek to play a vital role in multi-disciplinary services resultant from the changing needs of the industry and need to be involved in both the downstream and upstream sides in the construction supply chain market in order to provide value added services. The above results also corroborate the assertion of Chase *et al*, (2001), that the major competitive dimensions for which firms and organizations seek competitive positions include-cost leadership, product/service quality, reliability leadership, and delivery speed leadership.

CONCLUSION

Globalization in the built environment industry demands that BE professions upscale the quality and broaden the scope of their professional services in order to meet contemporary demands of society. The changing structure of the Built Environment, necessitates that contemporary and future Qs practitioners play a leading role, in order gain competitive advantage. The nations' quantity surveying practitioners must be proactive to provide cutting-edge leadership in all aspects of her traditional and multidisciplinary service offerings. The lack of QS visibility in the BE notably creates problem to her early appointment as other BE participants often take advantage of this, to usurp her traditional roles in addition to multidisciplinary roles. This empirical study has attempted to provide solutions to the problems of low QS visibility, and has also revealed priority areas of curriculum enrichment in order to upscale her traditional and multidisciplinary services. The quality of QS services determines her visibility, industry rating, brand image, service acceptability, global marketability, competitiveness and leadership in the Built Environment.

RECOMMENDATION

Arising from the results of the study, the following recommendations are therefore made for policy:

1. An urgent improvement of the present low public awareness of Qs professional services through a massive orientation and enlightenment process, right from the primary school level

2. Early and direct appointment of Quantity surveyors by clients and BE industry stakeholders in proposed infrastructure projects
3. Enrichment and immediate review of current traditional services curriculum especially in the area of financial reporting. Other critical areas include: contract auditing, contract documentation & tender evaluation, management of capital project expenditure, and cost modelling
4. Enrichment and immediate review of current multidisciplinary services curriculum especially in the area of privatization & commercialization. Other critical areas include: project management, facilities management, value management, due diligence reporting, risk management, fire insurance assessment, property taxation, capital market finance proposal, and technical auditing.

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