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Perception of Competences of Women in the Evolved and Emerging Roles of Quantity Surveying in Nigeria

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In the majority of developed countries, female representation in the workplace has significantly increased in recent decades, and the number of women entering traditionally male-dominated jobs is increasing because of organizational changes in worksite settings and other economic reasons. Many studies have focused on women who are employed in the construction industry, but only a limited number of these studies have specifically investigated their actual involvement. It is in the light of this that the competences of women in the evolved and emerging roles of Quantity Surveying were assessed through a thorough literature review and a semi structural questionnaire. Data was analysed using Descriptive analysis (mean score and standard deviation). The results concluded that the evolved roles have become moderately accepted in the QS practice by the female Quantity Surveyors. Valuation, Consultancy services and Contract administration with means of 4.30, 3.89 and 3.81 respectively were perceived as the most important evolved roles in which the female QS are more competent in. While BIM and whole life costing are the least competence area with a mean of 1.85 and 1.81 respectively. The study recommended that female Quantity Surveyors should develop and increase their competency especially in those roles they least perform, in order to attract women participation in the area.

Keywords: Competencies, Construction, Quantity Surveying and Women

Introduction

The extension of proper skills and competencies is critical and related to the development and continuing relevance of any profession (Mastura, Alireza, & Nurhafifah, 2016). In the Construction Industry, the issue of competencies expected from Quantity Surveyors (QSs) and the issue of understanding the intrinsic dependencies among these competencies remain on the research agenda (Dada & Jagboro, 2012). However, Quantity Surveyors (QSs) in developing countries remain tied to their traditional duties. It has been stated that the changes within the Quantity Surveying Profession have evolved due to the increased options available for acquiring resources for building projects, the increased complexity in building projects and the large number of contractual and legal disputes which occur within the industry (Ashworth & Hogg, 2007).

The Quantity Surveying Profession has been able to evolve and diversify into new areas of practicing, providing a wider range of services, with the modern quantity surveyor covering all aspects of project cost management, procurement and contract management (Lee *et al*., 2011). The services Quantity Surveyors perform today depend on the nature of their organization as well as their position. For instance, Quantity Surveyors working for clients will offer different types of service as compared with quantity surveyors working with a contracting organization. Similarly, Quantity Surveyors working with oil and gas differ from quantity surveyors in real estate development. The training and expertise of the Quantity Surveyors allows them to venture into areas including Value

Management, Risk Management, Arbitration, and Project Management. Dada and Jagboro (2012) also show that the investigation of QS competencies is significant to researchers in quantity surveying training and practice and in evaluating the performance expectation of QS. Ashworth and Hogg (2007) determine that the traditional activities of QSs that are continued to be practiced include single-rate approximate estimates, cost planning, procurement advice, measurement and quantification, document preparation (particularly bills of quantities), cost control during construction, interim valuations and payments, financial statements, final account preparation and agreement, and settlement of contractual claims. However, in recent years, the activities of QSs have been broadened to include inter alia, project management, and facilities management (Crafford & Smallwood, 2007). Ashworth and Hogg (2007) determine that other evolved activities include new tasks for project development, such as investment appraisal, whole life cycle costing (WLCC), Value management, Risk analysis, Insolvency services, Cost engineering services, Environmental Services Measurement and Costing, Technical auditing, Planning and supervision, Valuation for insurance purposes, and Administration maintenance programs.

RICS (2014) has considered the role of the QS in terms of competencies and described "competencies" as the capabilities, behaviours, knowledge, skills and attitudes required to perform a specific function with competence. It has grouped the competencies required of the PQSs seeking assessment of professional competence (APC) into three distinct categories: mandatory or basic competencies, core competencies and optional competencies (Ashworth & Hogg 2007). The RICS core competencies are the traditional roles of PQSs, while the optional competencies encompass mainly the evolved roles and some emerging roles. The evolved roles entail the additional non-traditional professional services that have been evolved (Frei & Mbachu, 2009) and gradually accepted over time by PQSs. According to Fanous (2012), the emerging roles in QS are areas which are being, or have recently been introduced into the QS profession and include Whole-life Costing (WLC) Assessments, Sustainability, and BIM management.

In the majority of developed countries, female representation in the workplace has significantly increased in recent decades, and the number of women entering traditionally male-dominated jobs is increasing because of organizational changes in worksite settings and other economic reasons (Jaafar *et al.*, 2014). In the construction industry, women have their own negotiation style and definition on their professional identities (Powell *et al*., 2009). Many studies have focused on women who are employed in the construction industry, but only a limited number of these studies have been specifically conducted to investigate their actual involvement (Mastura *et al*., 2016). The duties and competencies of QSs have been reviewed from many perspectives, such as their capability in technical and management competencies (Nkado & Meyer, 2001); and core, optional, and special competencies (Dada & Jagboro, 2012; Akosile, 2006; Awodele et al., 2007). However, the competencies of women in the evolved and emerging roles of quantity surveyors have not been studied. Thus, the aim of this research is to identify the competences of women in the contemporary roles of quantity surveyors.

Roles of Women in Quantity Surveying Professions

Women Quantity Surveyors are underrepresented in the profession because women are assumed to be less competent than men with the perceived domestic commitments and responsibilities, also less committed and more inclined to be absent from work. Indeed, the industry is characterized by a masculine work culture and long rigid work schedules. There was a literature review that women position in career decisions are influenced by their life stage and family expectation and women

main priority is to raise a family and therefore chose to limit their participation in the labour force (Reskin & Padavic, 1994).

The role of women in Quantity Surveying profession is changing fast in most societies especially in Nigeria. Nevertheless, the signs of gender segregation in job area and industrial sector still continue. Focus group interviews and literature review formed the basis of developing a survey questionnaire and revealed that professional women Quantity Surveyors have higher expectation and were more committed to remaining in the quantity surveying firm and construction industry despite the fact that they are few in the quantity surveying profession and construction industry. There is need to involve women Quantity Surveyors to enhance the growth of firms, because women professional Quantity Surveyors offer a distinct service in the built environment.

Women Quantity Surveyors are professionally trained, qualified and experienced in dealing with problems relating to construction cost, management and communication (Gabriel, 2014).

Gabriel (2014), in the study perception of female quantity surveyor's competency in professional practice found that the top three competencies that women quantity surveyors are most proficient to deliver are: accounting principles and procedures, design economics and cost planning, and due diligent and moderately competent in other areas which indicates that the required skills operated is adequate. The result also revealed that the competencies that women quantity Surveyors are currently least proficient to deliver are: business planning, Planning and programming, Qualification and costing of Industrial Engineering Construction works.

Research Method

There are many research methods which can be used in different situations to obtain data for a research. These methods could either be quantitative or qualitative and a combination of the two which is referred to as triangulation (Fellows & Liu, 1997). For the purpose of this research, a quantitative approach was adopted in order to assess the competencies women.

The common instruments for data collection available include; research questionnaires, interview sheets, study sheets, audio player etc. For the purpose of this research, the instruments adopted for data collection was a well-structured questionnaire which was divided into two sections. A snowballing sampling method was used for this study considering that only rarely are full population survey possible. A total number of 30 questionnaires were distributed as the sample size, and to qualify practicing female Quantity Surveyors working in different organizations within Kaduna State. Data collected was analysed using descriptive analysis (Mean score) and Standard deviation.

The scope of this study includes competency assessment of practicing Female Quantity Surveyors working in different organizations in Kaduna State, being largely populated with practicing Quantity Surveying firms.

Presentation of the Results

The results of the analysis were presented in Table 1-6. The total number of questionnaires that were returned constituted 90% of number of questionnaires that were distributed to respondent while the remaining unreturned questionnaires constituted only 10%.

Table 1: Percentage of Questionnaire Distributed and Rate of Return

Questionnaires	Number	Percentage
Distributed	30	100
Received	27	90
Not received	3	10

Table 2 shows the type of organization the respondents works and the result shows that 7.5% works in public organization, 55.6% works in consultant firms, 29.6% works in contracting firms and 7.4% works in financial institution. This indicates that majority of the respondents are working in consultancy firms.

Table 3 shows the number of female quantity surveyors in the organization. 85.2% of the respondent have less than 5 females in their organization while 14.8% have 5-10 females in the organization. This shows that majority of the organizations have less than 5 female quantity surveyors. This indicates a low a percentage participation of female quantity surveyors as identified.

Table 4 shows the years of working experience of female Quantity Surveyors, this shows that 29.6% of them having less than 5years of working experience, 63% having a range of 5-10yrs working experience while 7.4% have more than 10yrs of working experience. This signify that majority of the respondents have 5-10yrs of working experience in the construction organisation.

In Section B of the questionnaire, the respondents were asked to indicate the tasks undertaken by female quantity surveyors using a class of range. Each carries a 5 Likert ordinal scale value. For the tasks, the value range from $0.00 \leq$mean value < 1.49 – Very High, $1.5 \leq$mean value < 2.49 - High, $2.5 \leq$mean value < 3.49 – Moderate, $3.5 \leq$mean value < 4.49 –, 4.5 Low $\leq$mean value < 5.0 – None.

Table 5 shows how often they perform the evolved and emerging roles. The table shows this information in ascending order, which is from the lowest to the highest respectively. The result indicates that the three most performed roles are valuation, consultancy services and contract administration with mean of 1.81, 2.11, and 2.26 respectively while the least often performed roles are BIM, life cycle costing and whole life costing with mean of 4.19, 4.26 and 4.39 respectively. This indicates that most of the respondents often perform valuation and least performs whole life costing.

Table 2: Type of Organization

Type of Organisation	Frequency	Percentage	Cumulative Percentage
Government	2	7.4	7.4
Consultant	15	55.6	63.0
Contractor	8	29.6	92.6
Financial Institution	2	7.4	100
Total	27	100	100

Table 3: Number of Females in Organisations

Number of females in organisations	Frequency	Percent
less than 5	23	85.2
5 to 10	4	14.8
Total	**27**	**100**

Table 4: Years of Working Experience of Female Quantity Surveyors

Years of Working Experience	Frequency	Percent
less than 5	8	29.6
5 to 10	17	63
more than 10	2	7.4
Total	**27**	**100**

Table 5: Functions Undertaken by Female Quantity Surveyors

	N	Mean	Std. Deviation
Valuation	27	1.81	.786
Consultancy services	27	2.11	.847
Contract administration	27	2.26	.984
project management	26	2.96	.774
risk management	27	3.26	1.196
Sustainability	27	3.26	.944
value management	27	3.26	1.130
Insurance	27	3.63	.839
facility management	27	3.67	1.074
investment/development appraisal	27	3.74	1.163
strategic management and leadership	27	3.74	.984
Management/dispute resolution procedures	27	3.78	1.155
BIM management	27	4.19	.879
Life cycle costing	27	4.26	1.059
whole life costing assessment	26	4.35	.936

Table 6: Competences Best Performed by the Female Quantity Surveying.

	N	Mean	Std. Deviation
Valuation	27	4.30	.724
Contract Administration	27	3.89	.847
Consultancy Services	27	3.81	.962
Project Management	27	3.15	1.064
Value Management	27	2.93	1.207
Risk Management	27	2.67	1.144
Sustainability	27	2.63	1.245
Strategic Management and Leadership	27	2.63	1.149
Facility Management	27	2.63	1.334
Insurance	27	2.41	.694
Management/Dispute Resolution Procedures	27	2.33	1.209
Investment/Development Appraisal	27	2.26	1.163
Life Cycle Costing	27	1.96	1.160
BIM Management	27	1.85	.989
Whole Life Costing Assessment	27	1.81	1.178

Table 6 shows how competent are they in performing these roles. The table shows this information in descending order, which is from the highest to the lowest respectively.

The result shows that valuation, contract administration and consultancy services are the three roles that women are more competent in with mean of 4.30, 3.89 and 3.81 respectively and life cycle costing, BIM and whole life costing are the roles that they are least competent in with mean of 1.96, 1.85 and 1.81 respectively. The results identify that the respondents are more competent in valuation and least competent in whole life costing.

Discussion of results

The result indicates that the three most performed t a sks by the Female Quantity Surveying are Valuation, Consultancy Services and Contract Administration while the least often performed roles are BIM, Life Cycle Costing and Whole Life Costing Furthermore, The study also reveal that Competences Best Performed by the

Female Quantity Surveying are Valuation, Contract Administration and Consultancy Services while Life Cycle Costing, BIM and Whole Life Costing are the roles that they are least competent by the Female Quantity Surveying.

This is different from the study carried by Gabriel (2014) that the top three competencies that Women Quantity Surveyors are most proficient to deliver are: Accounting Principles and Procedures, Design Economics and Cost Planning, and Due Diligent and Moderately Competent in other areas which indicates that the required skills operated is adequate. The result also revealed that the least competencies by women Quantity Surveyors are proficient to deliver are: Business Planning, Planning and Programming, Qualification and Costing of Industrial Engineering Construction Works.

Also, previous studies have identified factors affecting BIM adoption (Lee, Yu, and Jeong 2013; Abubakar *et al.*, 2013; Aranda-Mena *et al.*, 2008; Ashcroft & Shelden, 2008; Bernstein & Pittman, 2004; Eastman *et al.*, 2011; Isah, 2015; Usman, 2015; Ibrahim & Abdullahi, 2016), assessed readiness level of consultants, contractors and public client to adopt BIM (Abubakar, 2014; Juan *et al.*, 2016; Usman, 2015; Idowu, 2017), and developed BIM readiness model based on technology acceptance, behavior-related theories and other performance measurement techniques, these studies concluded that some part of each of the segment are ready but some needs to give more attention to people and managements so as to achieve readiness to adopt BIM.
Hence, BIM is also one of the least competent by the Female Quantity Surveying in this study.

Conclusion

From the research the most performed functions by the Female Quantity Surveying are Valuation, Consultancy Services and Contract Administration while the least often performed roles are BIM, Life Cycle Costing and Whole Life Costing i.e. most of the respondents often perform Valuation and least performs Whole Life Costing, and also the practising female Quantity Surveyors are yet to embrace some of the emerging roles of the profession, however they are best competent in valuation, contract administration and consultancy services.

Lastly, concerning the competences best performed by the Female Quantity Surveying, the results identify that the respondents are more competent in Valuation, Contract Administration and Consultancy Services while Life Cycle Costing, BIM and Whole Life Costing are the roles that they are least competent by the Female Quantity Surveying.

Recommendations

Based on the findings of this study, the following recommendations were made with a view to ensure total functions, competencies and proficiencies by the Female Quantity Surveying in the Nigerian construction industry.

i. Proper pre-qualification exercise should be conducted by the professional body at membership registration stage to be sure of female Quantity Surveyor's competence.
ii. The professional body should develop a policy to help Women in the progression of their career most especially, to improve areas of competences where female Quantity Surveyors are not proficient.

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