

Research Article

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Women professionals' participation in the nigerian construction industry: finding voice for the voiceless

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Abstract: The construction industry is a male-dominated industry globally, with poor women representation in every facet of the construction profession and the involved jobs. In this context, this study investigated the current level of women participation, challenges faced by professional women, factors that influence them in the course of developing careers in construction and the criteria that can be used to encourage women participation in the Nigerian construction industry. This was done through self-administration of 145 structured questionnaires to 93 women professionals in the built environment and 52 employers of built environment labour in Abuja, Nigeria. The analyses showed that the construction industry is largely dominated by men, with women having a lot of challenges ranging from lack of self-confidence to compete with their male counterparts to insecurity in the midst of men to execute their work as professionals. Therefore, the study recommends that making young women aware of construction industry opportunities is needed to encourage them to build their careers in construction from the school stage in order to increase the number of professional women participating in the future. In addition to this, professional women should be given equal job opportunities as their male counterparts to ensure better representation of women so that the impact of women professionals in the construction industry can be extended.

Keywords: Abuja, Nigeria, built environment, employment, participation, women professionals

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1 Introduction

The construction industry is globally seen as one of the major contributors to the economic development of a nation. The industry is widely considered to be the world's largest industrial employer of labour, with an estimation in excess of 111 million construction workers worldwide in 1998 (International Labour Organization 2001). The linkages of the construction sector to all other sectors of the economy have been emphasized (e.g. Dansoh 2005), and this corroborated the assertion of Hillebrandt (1985), who posited that all the economic activities revolve around construction outputs. However, today's construction industry is conventional in employing women due to extreme gender stratification. Most of the women working in the construction industry carry out managerial, technical and specialized work while the employment of women at the professional level is very little and the data are limited to zero, but in many countries, these represent <1% of the labour force (Clarke et al. 2005).

In Nigeria, the National Population Commission (2012) recorded that Nigeria is estimated to have 167 million people, with 49% of the active age group assumed to be women, and the National Bureau of Statistics (2006) revealed that about 70% of the women living in Nigeria are rural dwellers. However, it is presumed that if women are not highly empowered, better economic growth of the country is less assured. Gender in Nigeria Report of 2012 affirmed that an investment in women and girls in Nigeria will increase productivity in this generation and will promote sustainable growth. Although awareness has been created in the country over the past few years that something should be done to empower women and enable them to fight poverty by generating revenues and resources to ensure the development of the country's economy, women involvement in construction is abysmally low.

Women are detail oriented and this skill is required in project control/management. Moreover, experience

shows that women executives are better communicators, more effective in decision-making and seek less personal glory than their male counterparts. Women generally face challenges as they advance in their careers, and this is most common in non-traditional occupations such as construction. Considering the perceived unattractiveness of the construction industry, a low number of women are choosing careers in the construction industry due to several factors that affect career choice, resulting in the poor implementation of the provisions of the Employment Equity Act in Nigeria, lack of women empowerment and a shortage of skills in the construction industry.

In spite of the many initiatives and the awareness created over the past few years, with respect to the significance of women participation in the industry, coupled with the efforts to balance the diversity and inequality in the industry workforce, women still remain a small minority of those working in the construction sector. In Nigeria, the population of women in the industry represents only 0.2% of those in the construction profession. Ginige et al (2007) argued that one of the problems facing today's building and construction industry is skill shortage due to its inability to attract young women to pursue careers in the industry. Increasing women representation in the construction workforce is a reliable solution for bridging the skill gap. This study therefore investigated the current level of women participation, challenges faced by professional women and the factors that influence them in the course of developing careers in construction.

2 Participation of women in construction

2.1 Developed countries' experience

The United Nations Educational Scientific and Cultural Organisation (UNESCO 1995) stated that two-thirds of the world's adult illiterate population comprises women. In sub-Saharan Africa, only six in ten adults are literate. Women need to be enlightened and conversant about the potentials of choosing a career in the built environment profession. Clarke et al. (2005) observed that in most developed countries, the built environment profession is the most male dominated and one of the biggest industrial employer as well as a major contributor to the gross domestic product.

The 1999 Nigeria Constitution is explicit in Section 17, subsection 3a, where it asserted that "all citizens without discrimination on any ground (gender, race,

etc) whatsoever, have the opportunity for securing adequate means of livelihoods as well as adequate opportunities to secure suitable employment" (Odivwri, cited in Bamgbade et al. 2014). Gender equality is taken to be very important globally, because at the Millennium Summit in 2002 at the General Assembly of the United Nations, the whole world vowed to encourage gender equality (Ricki 2007). In a related development, Bachelet (2011) stated that gender stereotyping is a major cause of occupational dichotomy, which has to be tackled holistically. Conventionally, women have not been employed in the built environment profession in any number to be considered. Therefore, research must be carried out to determine why women are not entering the built environment profession.

In the UK, from 1990 to 2005, the percentage of women employed in the built environment has remained broadly stable between 10% and 12% of the entire workforce (Ricki 2007). Whittock (2002) stated that the "UK construction industry is busier than it has been for a decade and is suffering from skills shortage at the professional level in engineering and quantity surveying." Therefore, it is not surprising that the UK government is again looking forward to utilizing the talents of women and is examining ways to encourage women's entry into male-dominated jobs.

In the USA, Warren (2003) found that the built environment profession is the fastest-growing industry for women. Although only about 3% of those employed by the industry comprises women, an increasing number of women are starting new businesses in the field. Built environment profession is the fastest-growing segment for female business owners, as it has increased by >30% since 1997. Government efforts to award contracts to the less-privileged and women-owned businesses in the USA are responsible for this trend. Markets tend not to treat women equal to men but to treat women as individuals in their own right (Schrum and Geisler 2003).

The majority of the European Union countries employ an average of 10% female workforce (Labour Statistic, cited in Aulin and Jingmond 2011). Women constituted about 8% of all employees in the construction industry. Figure 1 shows the participation of women in construction sector in European countries, Austria and Germany had 13.5% and 12% respectively of active women participation in their construction sectors indicating the highest female employment rate among the European countries. Contrarily, women participation in Greece is the lowest with only 2%, while Malta and Portugal have 4.3% of women participation in construction.

Most of the Member Countries have high-level participation of women in construction, ranging between 5% and 9%. Countries such as Romania, United Kingdom, the Netherlands, Bulgaria, Lithuania and France have



Fig. 1: EU27 women participation in construction, 2008.

Source: Adopted from Aulin and Jingmond (2011).

between 9% and 10% of women participation in construction. Clarke et al (2005) observed that most women working in the construction industry within the European Union are administrators, technicians and professionals rather than tradeswomen. In UK, for instance, 78% of women employed in the construction industry are involved in administrative work (Michielsens 2004). Moreover, women constitute <6% of construction workers in the specialized and managerial levels of the industry.

2.2 Developing countries' experience

Women are hidden resources, and these resources have remained untapped in many of the developing nations. For instance, in sub-Saharan Africa, women are not allowed or seen in the construction industry; women are more in number than men at construction sites in Asia. According to Wells (2004), in Thailand, Bangladesh and Sri Lanka, women account for 95%, 88% and 78%, respectively, of all employees who are productive in the construction industry. In spite of being visible at construction sites, women account for only a small proportion of all employees in the construction industry in Asia.

Women in Asia are generally employed as labourers or helpers at construction and building material sites, unlike in Western countries, where women are employed in administrative, technical and professional work. In these countries, women are placed below in the job hierarchy, as unskilled workers and head-load carriers. They carry out some of the hardest and most difficult tasks and are

paid less than men doing similar tasks. Sometimes, they are not paid at all and, in most cases, payment is made to the husband (Wells 2004).

In South Africa, a career in the construction industry has not been a popular choice for women. In reference to the occupational survey conducted by Statistics South Africa (2003), the percentage of posts filled by women in the construction industry in South Africa is 12.14% compared to the Social Industry, wherein 55% of the posts are filled by women. This percentage represents all job levels in the industry. If the percentage of professionals and women who are managing their own construction firms in South Africa in the construction industry is determined, then the percentages must be even lower.

The National Council for Research on Women, as quoted by Schrum and Geisler (2003), found that women had made significant progress in choosing careers in the sciences for the past few years, but in engineering, the gains noted previously had been stopped or even reversed. Statistics South Africa (2003) compared the percentage of South African women employed in 2001 to the percentage employed in 1995 and found that the percentage did show a significant growth, but it still showed that <10% of the employment in the construction sector is allotted to women.

2.3 Nigeria experience

Table 1 shows that the total percentage of women participants engaged in one activity or the other in the economy

is 43.1%, as opposed to men's 56.9%. This is statistically perfect but quite confusing because the top sectors in the economy by way of revenue generation have not been satisfactory to women in terms of participation, where women participation is 0.2 compared to men's 3.2% (Okoyeuzu et al. 2008).

In Nigeria, research on women participation in construction is very low and unlike research in the developed countries. Though studies carried out on the informal housing delivery sector (a sub-sector of the Nigerian construction industry) found that women participation in construction is very low, this observation was presumed to be due to certain factors that are generated by a number of cultural ethics and values existing among the amalgamated ethnic groups that make up Nigeria (Adeyemi et al. 2006).

The values, as articulated by these authors, range from the "one man-many wives" tradition, preference for the male child, a general belief in not supporting female education and not recognizing unmarried women, on the one hand, to allowing some economic activities to be earmarked just for men, on the other (Orubuloye 1987; Oruwari 1992; Okewole 1997).

The UNESCO (1995) has recognized that, over the past two-and-a-half decades, women's status in terms of allowable activities has improved tremendously, with women now having equal opportunity and access to education; meanwhile, these changes would have enabled women

to improve the situations under which they participate in various national economies. This may not be so because the current increasing trend in the level of participation of women in the Nigerian construction industry may not necessarily transform into adequate representation if strategies are not reviewed and new ways charted.

3 Research methodology

This study is based on a questionnaire survey conducted among women professionals in the construction industry in Federal Capital Territory, Abuja, and among the employers of women in the construction companies where the women professionals in the construction industry work. The sample of this study consisted of 93 women construction professionals and 52 employers (managers). This category of respondents was selected in order to have clear understanding of the involvement of women in construction. It is believed that the elicited data will provide a good basis to comprehend the situation of women employees in the construction industry.

For the category of respondents selected for the survey, questionnaires were self-administered, instead of posting or administering it via the Internet, to achieve a better response rate. The contents of the questionnaire were related to the barriers faced by women in construction, the

Tab. 1: Industrial classification of workers in Nigeria as of 2008.

Industry	Female	Percentage	Male	Percentage	Total
Agriculture	7,029,237	36.5	12,207,075	63.5	19,236,348
Fishing	188,831	1.0	293,901	1.5	482,732
Mining	40,301	0.2	152,860	0.8	193,161
Manufacturing industry	1,197,538	6.2	1,084,390	5.6	2,281,928
Electricity, gas and water	68,582	0.4	233,072	1.2	301,654
Construction industry	37,445	0.2	620,749	3.2	658,194
Retail trade	5,796,543	30.1	3,037,550	15.8	8,834,093
Hotel restaurant business	163,561	0.9	53,557	0.3	217,118
Transportation and communication business	96,300	0.5	1,308,250	6.8	1,404,550
Finance business	52,088	0.3	74,337	0.4	126,425
Real estate business	187,984	1.0	226,263	1.2	414,247
Administration and defence	477,061	2.5	1,352,562	7.0	1,909,149
Education	915,040	4.8	994,109	5.2	475,328
Health and social welfare	292,143	1.5	183,185	1.0	475,328
Social services	727,588	3.8	1,112,014	5.8	1,839,602
House helper	98,320	0.5	99,616	0.5	197,936
Others	16,113	0.1	50,325	0.3	66,438
Total	17,484,163	43.1	23,053,815	56.9	40,567,978

Source: Federal Ministry of Women Affairs and Social Development, cited in Japan International Cooperation Agency (2011).

factors influencing their participation in construction and the strategies needed to improve their participation.

3.1 Reliability analysis

A reliability analysis was conducted for the scales using Cronbach's alpha. The reliability was used to indicate the degree of consistency, which measures the attribute of the scale used and what it is supposed to measure. The less variation an instrument produces during repeated measurements of an attribute, the higher is its reliability. Cronbach's alpha is used here to measure the reliability of the questionnaire for each construct, and the value was calculated for each construct of the questionnaire. The most identical values of alpha indicate that the mean and variances in the original construct do not differ much, and thus standardization does not make a great difference in alpha. Table 2 shows the values of Cronbach's alpha for each construct of the questionnaire and the entire questionnaire. For the construct, values of Cronbach's alpha were in the range of 0.812–0.89. This range is considered high and acceptable; the result ensures the reliability of each construct of the questionnaire. Cronbach's alpha equals 0.804 for the entire questionnaire, which indicates a good degree of reliability of the entire questionnaire, as supported by Cohen et al (2000) and George and Mallery (2003). Hence, it is proved that the questionnaire is valid, reliable and suitable for the population sample.

4 Results and discussion

4.1 Factors that affect participation of professional women in the built environment profession

Table 3 shows the analysis of factors that affect professional women's participation in the built environment profession; preference of other jobs over construction jobs and gender

discrimination have very high influence, with a mean score of 4.62, amounting to 66.1% of the sampled population. This finding is in tune with the assertion of Azhar et al (2014), who argued that women face different forms of discrimination in the male-dominated construction industry, the most obvious among which is sexual harassment (Bagilhole 2003). "Family obligations" is ranked third and is deemed to be of very high influence. This is supported by Hatipkarasulu and Roff (2011), who considered family/work life balance as a significant factor affecting women participation in construction. Recruitment policies and procedures are of high influence, and this is ranked next to family obligations. The result affirmed the finding of Chun et al (2009) that negative perceptions of women capabilities is a hindrance to their interest in construction work. The analysis shows that lack of mentoring (mean score: 3.54) is also of high influence, as lack of mentor or role model dissuades women from participating in the construction industry (Yates 2001). Lack of career progression, as well as nature of the construction industry, is also of high influence (Dainty and Lingard 2006). Most of the factors are of high influence, if applied properly, in encouraging professional women participation in the construction industry.

4.2 Barriers/constraints to women participation in the built environment profession

From Table 4, we see that the mean score of 4.82, amounting to 85.2%, for the dominance of male culture in the construction industry and the attitudes, perceptions and behaviours of the society are deemed to be of high extent and ranked first. The mean score of 3.54 for the low level of females' self-confidence at the career level when compared to males can be deemed to be of high extent and it is ranked fifth. The mean score of 4.58, amounting to 57.1%, shows that the inflexible and harsh working conditions are of high influence and ranked third. Most of the barriers/constraints that prevent women's entry into the construction industry are of high influence.

Tab. 2: Reliability analysis using Cronbach's alpha for each construct of the questionnaire.

Construct	Cronbach's alpha	Number of items
Level of influence that some factors have on professional women participation in the construction industry	0.883	9
Barriers or constraints that prevent women's entry into construction industry	0.891	9
Level of agreement with some strategies to improve women participation in the construction industry	0.872	16
Factors affecting the participation of women professionals in the construction industry	0.812	11

Tab. 3: Factors that affect participation of professional women in the built environment profession.

Factors	Mean score	Standard deviation	Factor ranking
Family obligation	4.58	0.799	3th
Fear of competition with men	2.34	0.746	9th
Female preference for other jobs relative to construction jobs	4.62	0.683	1st
Gender discrimination	4.62	0.683	1st
Lack of mentoring	3.54	0.802	5th
Lack of career progression	2.88	0.746	7th
Nature of the construction industry orientation	3.54	0.802	5th
Recruitment policies and procedures	3.64	0.802	4th
Sociocultural perceptions	2.47	0.746	8th

Tab. 4: Barriers/constraints to women's participation in the built environment profession.

Barriers/constraints	Mean score	Standard deviation	Factor ranking
Low level of females' self-confidence at the career level when compared to males	3.54	0.802	5th
Inflexible and harsh working conditions	4.58	0.799	3rd
Limited number of women attaining senior position in the firm	1.47	0.683	8th
Smaller proportion of women training in construction-related fields	2.34	0.746	9th
Unequal job opportunities for women	3.54	0.802	5th
Dominance of male culture in the construction industry	4.82	0.683	1st
Lack of support, networking and mentoring opportunities	2.47	0.746	7th
Attitudes, perceptions and behaviours of the society	4.82	0.960	1st
Limited influence of women in construction	3.64	0.802	4th

The results of the survey shown in Table 4 emphasize the significance of the barriers being faced by women in entering and continuing to participate in construction works. Although there are several barriers hindering the participation of women in construction, the few barriers that are highlighted lead to poor or low participation of women in the industry. According to the results obtained from the survey, construction industry is largely dominated by men, with women facing a lot of challenges ranging from lack of self-confidence to compete with their male counterparts, inflexible and harsh working conditions, limited number of women attaining senior positions in a firm and smaller proportion of women training in construction-related fields to unequal job opportunities for women. These findings are similar to the results of Dainty and Lingard (2006), Shanmugam et al (2007) and Azhar et al (2014), who found most of the barriers stated herein as impediments to women participation in construction.

4.3 Strategies to improve women participation in the built environment profession

From Table 5, the mean score analysis for professional women shows that making young women aware of

opportunities in construction, better representation of women and extending the influence of women are ranked as the best strategies for continuous participation of women in construction. This is consistent with the results of Dainty et al (2000), who posited that when a clear path for career opportunities is provided, irrespective of gender, women are more prone to remain within the industry. It is interesting to note that making young women aware of opportunities in construction is ranked first by both the women professionals and the employers, which is an indication of the level of importance attached to this strategy by the respondents. The analysis also showed that flexible working hours and creating scholarship opportunities for women, especially for secondary school and university students, to pursue degree in the built environment are good strategies to improve women involvement in construction. These strategies are also supported by previous studies (such as that of Aulin and Jingmond 2011), which indicated that the Swedish Construction Federation's suggestion allowing a flexible work schedule and work hours is a positive way of encouraging female participation in construction. Networking and mentoring schemes are also considered ways of retaining female workers in construction. This type of peer support or mentor-protégé

Tab. 5: Strategies to improve women participation in the built environment profession.

Strategies	Women professionals Mean score	Rank	Employers Mean Score	Rank	Overall Mean Score	Rank
Incentives, such as childcare facilities	4.49	7th	3.74	10th	4.12	11th
Support educational and career pathways	4.52	6th	4.6	7th	4.52	6th
Better job security	3.83	9th	4.82	3rd	4.33	10th
Better benefits	3.54	13th	3.92	8th	3.73	12th
More opportunities for promotion	3.64	11th	3.73	11th	3.69	14th
More flexible working hours	4.47	7th	4.68	6th	4.56	5th
Better representation of women	4.92	1st	3.90	9th	4.41	8th
Education and training opportunities	3.80	10th	4.96	1st	4.38	9th
Equal opportunities, policies and procedures	4.91	3rd	4.82	3rd	4.87	3rd
Extending the influence of women in construction	4.92	1st	2.48	14th	3.70	13th
Networking and mentoring schemes	3.98	8th	4.96	1st	4.47	7th
Making young women aware of opportunities in construction	4.92	1st	4.96	1st	4.94	1st
Creating scholarship opportunities	4.62	5th	4.68	6th	4.65	4th
Organizing excursions	1.65	14th	3.72	12th	2.69	15th
Favourable selection criteria and recruitment methods	4.91	3rd	4.96	1st	4.94	1st
Develop links with educational establishment	2.82	12th	2.21	15th	2.25	16th

relationship is perceived to be important in attracting and retaining women in construction (Wangle 2009; Aulin and Jingmond 2011).

5 Conclusion

This study examines the current level of women's participation, barriers faced by them, factors that influence them in the course of developing careers in construction and strategies that can be used to encourage women participation in the Nigerian construction industry. The analysis further confirms that construction industry is largely dominated by men, with women facing a lot of challenges. There is lack of self-confidence to compete with male counterparts and they also feel insecure amidst men to execute their work as professionals. Adequacy of employment of women helps to tackle a number of human resource challenges, and other issues raised in this research work deemed to be of high extent affect the participation of women professionals in the construction industry. Moreover, most of the factors influencing women participation and the barriers/constraints that prevent women's entry into the construction industry are of high impact. Based on these challenges, the study explores the strategies to improve their participation in

the construction industry. Therefore, the study recommends that making young women aware of construction industry opportunities is needed to encourage them to build their careers in construction from the school stage in order to increase the number of professional women participating in future. It is also recommended that career advancement activities that are needed to sustain career path progression include training and mentoring in order to retain women professionals.

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