

## **Development of a Framework for Attracting and Retaining Women in Construction Practice**

\*K.J. Adogbo, A.D. Ibrahim and Y.M. Ibrahim

**Abstract:** Previous research has indicated that women are significantly under-represented in the Nigerian construction industry and that female undergraduates face barriers that deter them from engaging in construction practice. This research examined the barriers faced by female undergraduates in the construction disciplines at Nigerian Universities. The research adopted the use of a questionnaire and semi-structured interviews. A total of 360 questionnaires were distributed, and 259 (71.94%) were returned and used in the analysis. The semi-structured interviews were conducted with 50 female students and 16 women across the professions of Architecture, Building, Civil Engineering and Quantity Surveying. The results revealed that the undergraduates perceived the construction practice to be synonymous with site activities and that family responsibility posed the greatest barrier to their participation. The strategies identified by the women in practice included active participation in the activity of professional bodies and seeking a mentor. It was concluded that female graduates can be attracted to the industry, but efforts need to be put in place to successfully implement the strategies identified by the professional women. A framework that addresses gender issues in attracting and retaining graduates in the construction practice was developed to help women plan their career in the industry.

**Keywords:** Construction undergraduates, Gender, Barriers, Women

### **INTRODUCTION**

Women account for 49% of the Nigerian population (National Bureau of Statistics, 2010). Adeyemi et al. (2006) and Kolawole and Boison (1999) have observed that it is a cause for concern that this large human resource is not being fully utilised, in particular by the construction industry. They observed that the construction industry is very important because it makes a significant contribution to the socio-economic development process through its significant contribution to the Gross Domestic Product. They concluded that there is a need to encourage more women to pursue construction by encouraging girls in secondary school to take science subjects and by introducing initiatives where female students are exposed to the benefits of working in the construction industry.

There exists a wide body of research on women's participation in construction industries around the world with a strong case made for equality and inclusivity. Research on inclusivity is not limited to women's participation alone, but attempts have been made at addressing masculinity, investigating how sexual orientation is perceived in construction and work-life balance for men in the construction industry (Powell and Sang, 2013).

However, Adeyemi et al. (2006) observed that research into women's participation in the Nigerian construction industry is scant. However, from other studies in developed countries, researchers were able to identify several barriers inhibiting women's entry into construction. Kolawole and Boison (1999) reviewed

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Department of Quantity Surveying, Ahmadu Bello University, Zaria, NIGERIA

\*Corresponding author: kjadogbo@abu.edu.ng

literature on the importance of women in construction and the factors responsible for the low number of women in the Nigerian construction industry. They observed that because women form 49% of the population (43.97 million out of 88.5 million according to the 1991 census), it is wasteful to talk of development when roughly half of the populace is not being meaningfully and effectively integrated in the development process.

Kehinde and Okoli (2004) found that the participation of women in construction is impeded largely by discrimination in employment/promotion (employers prefer male employees or at best young, single professional women), society's perception of the industry as suitable only for men and the low perception of the image of these careers. Adeyemi et al. (2006) observed that women in particular are prejudiced not to have the wherewithal to succeed in the construction industry.

Kehinde and Okoli (2003) and Kolawole and Boison (1999) undertook a study on the intake of women into construction-related courses in the tertiary institutions in Nigeria. Their studies revealed that the intake of women has increased over the years but that enrolments are more concentrated in courses requiring office work rather than field work. A background in science is a requirement for enrolment in the construction disciplines, but the low enrolment of women in Science, Technology, Engineering and Mathematics subjects limits the number qualified to pursue a career in a construction discipline. Furthermore, the participation of women in professional bodies was shown to be very low, and they opined that this may be because many of the graduates of these courses do not eventually end up practicing the professions they were trained for. A significant number of female construction graduates were found to not be working in the industry or stay long enough to register with any professional bodies (Kehinde and Okoli 2003; 2004). Brink and Stobbe (2009) and Gurjao (2006) surmised that while recruitment remains important, there is a knowledge gap in translating qualifications into employment and employment into retention (Gurjao [2006: 28] refers to this as the "leaky pipeline" of women's career). This paper looks into the barriers, keeping in mind the existing cultural dynamics in some parts of the Nigerian society, such as the low enrolment of females in schools due to the cultural belief that educating girls is of little use because they will end up in their husbands' homes. Additionally, the practice of keeping women in seclusion limits the participation of young women who may have an interest in the industry. This paper examines the barriers faced by female undergraduates in construction disciplines in Nigerian Universities with a goal of developing a framework for attracting and retaining women in the construction practice. It is hoped that this will provide a way to positively address the underrepresentation of women in the industry, while providing empirical data to further the understanding of gender studies in the Nigerian construction industry.

## **THE BARRIERS TO WOMEN'S PARTICIPATION IN CONSTRUCT**

Dainty, Bagilhole and Neale (2000) opined that women experience difficulties in developing their careers within the industry due to barriers that they face. Amaratunga et al. (2006) posited that women's participation in the UK construction industry is low and that one major reason for this is the barriers faced

by the women working in the industry. Dainty, Bagilhole and Neale (2001) and Bennett, Davidson and Gale (1999) also showed from empirical studies that these barriers hinder some women from entering the industry. According to Amaratunga et al. (2006), the male dominated nature of the construction industry represents a significant barrier to *female recruitment (entry)*, *career progression (development)* and *retention*. Gurjao (2006) notes that translating qualifications into employment seems to be the biggest barrier to entry in the construction sector.

Some of the barriers to women's participation in the construction industry have been identified by several authors and include the following: the poor image of the industry, which is typically portrayed as promoting adversarial business relationships, poor working practices that require brute strength, good tolerance for outdoor conditions, inclement weather and bad language (Dainty, Bagilhole, and Neale, 2000; Fielden et al. 2000; Agapiou, 2002); lack of career knowledge and information about the industry and the career opportunities it can offer (Fielden et al. 2000; Amaratunga et al. 2006); culture and working environments (Amaratunga et al. 2006); recruitment practices biased against women (Fielden et al. 2000; Agapiou, 2002; Amaratunga et al. 2006); and family commitments, a lack of role models, poor career advice, peer pressure and poor educational experiences (Whitlock, 2002; Gale, 1994). Kehinde and Okoli (2004) identified some of the factors that created drawbacks to the career pursuits of women: pregnancy, maternity, child rearing, emotional stress and sexual advances from senior male officers.

## RESEARCH METHODS

### Research Design

The suitability of the research methods for the three phases of data collection required for this study led to the choice of triangulation as a research approach. The rationale for doing this was the need to balance the shortcomings of the quantitative and qualitative approaches and harnessing the strengths of each. As Sambo (2005) observed, the quantitative study of human phenomena can only provide frequencies of occurrences for certain observable manifestations of the phenomena without explaining why they occur. Therefore, it is important to adopt a qualitative research paradigm to compensate for the limitations of using a quantitative approach to study human behaviour.

### Sample Selection

The potential survey population in this study includes all construction undergraduates in Nigerian Universities and female professionals in the construction industry. However, surveys operate on the basis of statistical sampling considering that only rarely are full population surveys possible (Osuala, 1987; Fellows and Liu, 1997). The survey for this study was undertaken in three phases. In the first phase, a questionnaire survey for final year students in the construction disciplines of architecture, building, civil engineering and quantity surveying was employed. The study design led to a selection of three Universities, thereby yielding a research sample of all the final year students in the Departments of Architecture,

Building, Civil Engineering and Quantity Surveying from Ahmadu Bello University, Zaria; Abubakar Tafawa Balewa University, Bauchi and the Federal University of Technology, Minna. The only pre-condition is that these students had each undertaken six (6) months of industrial training in the construction industry. In the second stage, semi-structured interviews were conducted with final year female students and third, interviews were conducted from a sample of women employed in the construction industry. The women were selected randomly based on their availability and proximity to the researcher. Women with varied life experiences were targeted to capture a wide spectrum of perceptions held by women at different stages of their careers.

### **Data Collection Instruments**

The questionnaire survey was adopted to better reach the large, homogenous numbers of final year students in the chosen institutions. The issues covered were easily understood, as determined in the pilot study. The questionnaire was therefore deemed to be appropriate and adequate. The second and third phases of the survey entailed semi-structured interviews with female undergraduates and practitioners in the construction industry.

The numerical data were compiled and entered into the Statistical Package for the Social Sciences (SPSS) software. The quantitative data were analysed and the results of the descriptive statistics obtained included frequency distributions, measures of central tendency (means) and standard deviation. The data from the open ended questions and interview were coded using themes. Data from the interviews were textual and can be difficult to analyse. However, the richness of the data from the qualitative research means that substantial results can be obtained if the data are examined with the appropriate analytical tools. The analysis for the qualitative data in this study involved the use of conceptual content analysis, as elaborated in Wilkinson and Birmingham (2003). Content analysis applies significance or meaning to information and helps to identify patterns in the text (transcripts of the research interviews). The principle of content analysis requires first that the data be coded or grouped into categories. These categories need to be checked to be sure that they accurately represent what is being said. Content analysis takes into account the appearance of a concept or the numbers of times (frequency) a particular concept appears in a text (Walliman, 2001). However, in this study, the concepts were coded for incidence.

## **RESULTS AND DISCUSSIONS**

### **Results and Discussions from the Questionnaire Survey**

The final year students in the construction disciplines of Architecture, Building, Civil Engineering and Quantity Surveying were the target populations of this survey. Table 1 shows the number of students enrolled in the various departments at the time of the study. Thirty questionnaires were distributed in each of the four departments in the three institutions yielding a total of 360. A total of 263 questionnaires were returned, and 259 questionnaires were used for the analysis, representing 71.94% of the questionnaires distributed.

Table 1. Number of Students Enrolled in the Four Courses Examined

		<b>ABU, Zaria</b>	<b>ATBU, Bauchi</b>	<b>FUT, Minna</b>	<b>Total</b>
Architecture	Male	133	69	79	281
	Female	22	16	5	43
Building	Male	58	64	46	168
	Female	8	9	6	23
Civil Engineering	Male	151	55	84	290
	Female	9	6	6	21
Quantity Surveying	Male	69	57	58	184
	Female	15	14	17	46

Notes: Ahmadu Bello University, Zaria (ABU, Zaria); Abubakar Tafawa Balewa University, Bauchi (ATBU, Bauchi); The Federal University of Technology, Minna (FUT, Minna)

There were 202 male respondents and 57 female respondents, corresponding to 78% and 22%, respectively. The results of the survey showed that the majority of both male and female respondents were from the northern part of the country where the perception that women are rarely allowed to work in public exists. The institutions sampled are all located in the northern region of the country, which may explain why most of the students were from that region. Students were more likely to attend school where they are domiciled or where they hail from.

The findings from this study affirm the position from the literature on the wide disparity between the numbers of male and female students registered in educational institutions (Dainty and Edwards, 2003; Dauda, 2007; Imhanlahimi and Eloebhose, 2006; Kehinde and Okoli 2004, Kolawole and Boison, 1999) and construction courses in particular. There are fewer women than men enrolled in all of the Departments surveyed, which was identified in Kehinde and Okoli (2003) as one of the factors influencing the low trend in women participating in the construction industry. Consequently, this trend continues into practice and of the few who do graduate, a smaller number are attracted to pursuing careers in construction and even fewer remain long enough in the industry, confirming the findings of Adeyemi et al. (2006) and Kolawole and Boison (1999) that women are under-represented in the Nigerian construction industry. The key component is that careers in the construction disciplines studied can only be pursued by students who have a background in science-based subjects and the fewer number of female students is an indication that there are fewer girls in science-based subjects than men. The statistics in Dauda (2007) and Kehinde and Okoli (2003) illustrate this trend. Consequently, in the crucial early stages of career development, women are outnumbered by men in highly relevant subjects such as Mathematics, Science and Technology.

The barriers identified from the literature were subjected to investigation and the distinction between external and internal barriers, as described in Ling and Poh (2004), was used as the basis for the questionnaire survey.

## External factors/barriers

Table 2. Ranking of External Barriers by Respondents

The External Barriers	Female		Male		Combined	
	Mean	Rank	Mean	Rank	Mean	Rank
Construction jobs are stressful and demanding	4.02	1	3.86	2	3.9	2
Construction jobs are very competitive in nature	3.96	2	3.99	1	4.25	1
Male culture exists at the workplace	3.76	3	3.36	6	3.44	5
Construction jobs involve long working hours	3.70	4	3.73	4	3.73	3
The higher numbers of male professionals in construction intimidates women	3.66	5	3.38	5	3.44	6
Women on sites are not respected to the same extent as men	3.60	6	3.26	8	3.33	8
Female graduates face sexual harassment at work	3.49	7	2.88	12	3.01	12
Female graduates are given desk bound jobs	3.46	8	3.12	11	3.2	9
Construction jobs are masculine in nature	3.29	9	3.36	7	3.34	7
Female graduates are not given equal opportunities as male counterparts	3.27	10	2.74	13	2.86	13
Women are more suited to administrative than production function on sites	3.19	11	3.86	3	3.71	4
Female graduates are not easily accepted at the workplace	3.13	12	2.66	14	2.8	14
Construction jobs are undertaken under harsh working conditions	3.09	13	3.21	10	3.18	10
Construction jobs are career focused at the expense of family	3.05	14	3.21	9	3.17	11
Female graduates don't have opportunity to attain higher positions	3.00	15	2.5	15	2.61	15
Construction jobs have poor image	1.64	16	1.8	16	1.76	16

**Internal factors/barriers**

Table 3. Ranking of Internal Barriers by Respondents

The Internal Barriers	Female		Male		Combined	
	Mean	Rank	Mean	Rank	Mean	Rank
Ability to be ambitious and to excel at work	4.42	1	4.31	3	4.33	3
Ability to work well with contractors and subcontractors	4.35	2	4.36	2	4.36	2
Potential to exhibit leadership ability	4.32	3	4.25	5	4.27	5
Ability to pay attention to details	4.23	4	4.43	1	4.38	1
Ability to exhibit a high level of competence	4.23	5	4.31	4	4.29	4
Exhibiting competitiveness where required	4.12	6	3.99	10	4.02	9
Ability to undertake logic and reasoning	4.11	7	4.24	8	4.21	6
Ability to manage construction workers or subordinates	4.05	8	4.25	6	4.21	7
Ability to be assertive when the situation demands it	4.02	9	3.98	11	3.99	10
Exhibit high quality technical skills	3.96	10	4.24	7	4.18	8
Willingness to travel	3.59	11	3.90	14	3.83	13
Ability to withstand much pressure at work	3.58	12	3.99	9	3.90	11
Ability to perform any required work	3.54	13	3.92	13	3.84	12
Ability to persist long on the job	3.31	14	3.92	12	3.79	14

Surveying both male and female students created the opportunity to evaluate the responses from both genders to determine that these challenges are not gender biased or that the research is from its very nature skewed to a pre-determined conclusion. The external barriers, which the respondents in this survey identified as having the highest degree of influence, were found to be similar across both the male and female respondents. This is indicative of the fact that the barriers are not particular to female students only. Of particular interest are that jobs in construction are competitive, stressful and demanding, and involve long working hours. All of these issues are indicative of the nature of the construction industry, which may deter anyone, either male or female, from entering the industry. In Ling and Poh (2004), the external barriers identified that influence final year students were the poor image of construction jobs and its competitive nature, as well as the sexist attitudes (female graduates facing glass ceilings and not being given equal opportunities). The culture within the workplace and higher numbers of male professionals in construction will not likely influence the choices of male graduates but may discourage female graduates from pursuing their careers.

## **Results and Discussions of Interviews with Final Year Undergraduates**

Some of the issues raised in the questionnaire survey were further probed in the interview to gain clarity and to clearly articulate and explain those phenomena that exist among the female respondents.

### **Characteristics of the interviewees**

The female respondents from the three Universities were interviewed to further clarify and/or explain the issues that arose in the questionnaire survey. Fifty final year female students of Architecture (9), Building (3), Civil Engineering (13) and Quantity Surveying (29) were interviewed.

### **The potential barriers identified by women**

#### ***Cultural/religious barriers to propensity to practice***

1. Traditional role of a home maker: Traditionally, most people think women should stay at home. However, this is a mindset that most are willing to refute, claiming that times are changing and that the work environment is now more receptive of women.
2. Dressing: There is a need to dress appropriately for such functions as site visits.
3. Interaction with men was a challenge in two respects: First, interacting with male colleagues was difficult because the men tended to look down on and discriminate against women because they (the men) think they have more experience. The second aspect has to do with spousal approval; not every man will allow his wife to interact with other men, as this will go against cultural expectations.

#### ***Marital/family commitments as barriers***

1. Coping with pregnancy and site work. This is one reason why some women are unsure about their future in the construction industry.
2. The challenge of how to balance long work hours with family commitments.
3. Permission from spouse to work: some decisions to practice or not will depend on the approval of their spouses.

#### ***Barriers faced in professional practice***

1. Nature of site work is stressful and site conditions are harsh.
2. Not being taken seriously by operatives/colleagues on site: the operatives did not always do as they are asked because the instructions were given by women.
3. Being treated with a soft hand because of their gender.
4. On a more positive note, some of the respondents noted that they enjoyed some favour on sites being the only female among the workers.
5. Lack of female role models in the industry.



The common family and societal expectations from any young Nigerian girl is to marry and to have children. While this may not be the unique belief within Nigeria, African culture permeates the fabric of society such that women are forced to either meet these expectations or face the disapproval of family and friends. Two things that are important to women are the approval of their spouses and how to handle children, pregnancy and work. The construction industry is considered to be a suitable industry for women to work in, and the support of a spouse is a key factor in a women's entry and success in the industry.

Cultural barriers were identified by the women as being entrenched in the minds of people and would require significant re-orienting of the minds of both men and women to come to terms with women in the construction practice. These include for men, longstanding traditions of the construction industry being seen as the "man's domain" and for women, that young girls need to be encouraged to take science-based subjects and that older girls need to be available to teach and mentor the young professionals.

It is impossible to work in construction without interacting with men, and for two of the respondents, it was a source of conflict with their spouses. Cultural expectations also limit women's interactions to ensure that they are not labelled as "loose women". For women who are overly concerned about societal approval, they are constrained to address professional work as well as people's expectations of what is considered appropriate behaviour for women.

### **Analysis and Discussion of the Results of Interviews with Professional Women**

The experiences of the female professionals was used as a basis to assess the validity of the perceptions of the female undergraduates and also to be able to articulate a strategy that could be adopted to deal with some of the issues identified in the study.

#### **Characteristics of the interviewees**

The interviews were conducted between December 2011 and March 2012 with Architects (3), Builders (1), Civil Engineers (1) and Quantity Surveyors (11). Ten of the respondents were Christians, while six were Muslims. Nine were married, and seven were single women. Five of the respondents work in private organisations, whereas 11 worked in the public sector (at Federal and State government organisations). Those in private organisations work in contracting firms and consultancy firms, whereas those in public service are in tertiary institutions, Federal and State agencies and research institutes.

#### **The barriers faced by women in practice**

##### ***Family responsibilities***

The experiences of the women interviewed indicated that family responsibilities influence their abilities to perform well within the workplace. The responses indicated that women have the choice to either focus more on family responsibilities and limit time spent on career development or focus more on career at the expense of family responsibilities. Their experiences have shown that

the best option is to find a way to balance the time required to take care of one's family obligations and progress in career development. Dainty and Lingard (2006) found that there is pressure on women to work long hours, which has a negative impact on their family life. This is an integral part of work in the construction industry that the respondents have accepted and have tried to accommodate in their places of employment.

One of the respondents said that continuous family responsibilities results in low aspirations, which may reflect the reality that a large number of women know that increased responsibility at work together with their domestic duties would make life impossibly demanding.

### **Cultural barriers**

The issue of culture exists twofold: the culture in the construction industry and the culture of society at large. The aspects of societal culture that have an influence on women's careers were identified by interviewees as dressing and interactions with men. Dressing is a personal issue, but care needs to be taken to remain professional at work and not to offend the norms where one is engaged.

The issues of culture and religion were investigated, and respondents opined that the culture of the society is more of a barrier to women than their religious beliefs (whether Christian, Muslim or a Traditional worshipper). Work in the construction industry requires interactions with people who may not be literate or speak English, creating a challenge to professionals irrespective of the location.

### **Religious barriers**

The issue of barriers faced due to religious beliefs are of a personal nature and do not affect one's professional work; the respondents identified three areas: restrictions on dressing, especially for married women, questions of morality where compromises may be demanded and, in rare cases, discrimination by employers due to their personal sentiments.

Religion is an important aspect of the lives of the interviewees, and for the most part, it does not hinder them in their work. Religious practices such as prayers and observances of holy days/times are intertwined with workplace activities and underscore the value systems of members of the society. Consequently, religious values are brought to bear on construction workers' behaviour and the relationships with their colleagues on construction sites. These impacts could be perceived as positive (making them more accommodating and compassionate) or negative (promoting exclusionary tendencies), as observed by Kheni (2008).

### **Lack of role models**

All of the respondents agreed that it is vitally important to have female role models or mentors that a woman in practice can look up to or follow for her professional development. Ten of the 16 respondents did not have role models when they started out in their career, but they did observe that if they had a mentor, it would have given them the opportunity to make better choices. The assumption among some students is that these mentors should be women, but this may not always be the case. The success of other women is undoubtedly a motivation for success, as

some of the respondents observed. Nonetheless, this mentorship can also be provided by male professionals.

Mentoring is important for providing women with the self-confidence and skills to pursue career advancement and promotions. Mentoring is a critical tool for professional development; however, it can be difficult for women to find female role models or mentors in the construction industry. The interviewees were very firm in their belief that a female role model would be good for a young female professional. However, women who have achieved success have been forced to rely on male mentors, and this in itself justifies the position that where a female mentor is not available or accessible, a male role model would serve just as well.

### **Lack of a career development path**

The development of a career for a woman in the construction industry is not a "one-size-fits-all" scenario. Upon deciding to pursue a career in the construction industry, a woman needs to have some tools beyond the training and induction that will be provided by employers. The strategies identified by the respondents as the ones they had adopted in their practice are as follows:

1. Have a mentor provide career advice;
2. Regular participation in professional meetings/activities;
3. Regular professional/educational development;
4. Self-determination and passion at work; and
5. Learn to accept and balance family time and work.

## **FRAMEWORK DEVELOPMENT**

The purpose of developing a framework in this study is to provide a structure that shows how a female undergraduate may pursue a career in construction and to specifically identify issues that need to be addressed at different stages in the career path, including among others, the issue of employment in the construction industry and the necessary framework to retain women within the industry.

### **The Framework Derived from the Data Analysis and Literature Review**

Definition of terms used in the framework:

1. Stage of Development: Stage is "a period or state somebody passes through while developing or making progress" (Wehmeier, et al., 2006: 1434). In the context of this framework, stage of development refers to the various levels of development (education and career) in the typical career path of an individual.
2. Enablers: The key elements that make it possible for an individual to make a favourable decision towards a career in construction by creating the necessary conditions.
3. Barriers: Situations or problems that prevent or constrain the choice of a career in the construction industry.

4. Strategies: The identified means by which the barriers identified may be overcome.

The framework has been developed with the aim of providing a guideline to stakeholders for the purpose of attracting women graduates into the construction industry and retaining those who have taken up employment in various aspects of construction work. Specifically, this framework can be used in its entirety or adapted in part by employers, professional bodies, government agencies or other policy making bodies involved in gender mainstreaming or educational institutions and by women who are interested in improving younger women's participation in construction practice. The framework is presented in Figure 1.

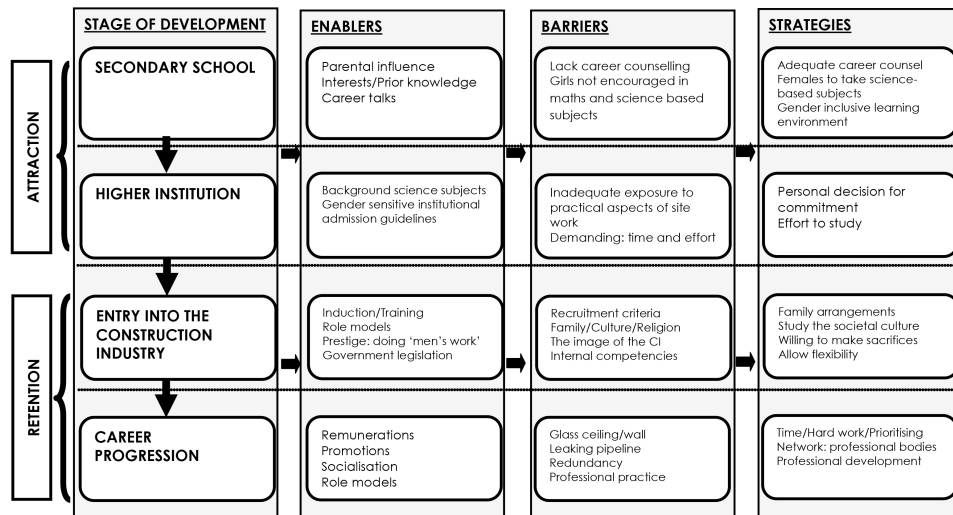


Figure 1. The Framework for Attracting and Retaining Women in Construction

### Stage 1: Secondary school education

Students at this stage of their development have the option of attending either a private secondary school or a school run by the Federal or State Government (Public school). Irrespective of the type of secondary institution attended, the determinant for entrance into a construction discipline is to sit for and obtain credits in Science subjects that include, but are not limited to, Mathematics, Physics and Chemistry.

The factors, which according to the respondents positively impacted their choice of career in construction, include the perceived marketability of the profession, influence of parents and personal interest. The impact of career talks was not adequate enough to lead students to a choice in construction. There is a negative cultural dimension to educating women, which leads to the low enrolment of women. These dimensions include, first, early marriages arranged for girls (requiring them to withdraw from school) and, second, the belief that women should only end up as housewives.

The enabling strategies that need to be adopted to adequately encourage more female students at this stage of development, such as encouraging female students to opt for subjects such as Physics, Chemistry, Technical Drawing, Woodwork, Metalwork and adequate career counselling will lead to an improved representation of women in higher institutions and, subsequently, in practice as well.

### **Stage 2: Training in higher institution**

At this stage of development, students can attend either a Private or Public University or the Universities of Technology. The Construction disciplines of Architecture, Building, Civil Engineering and Quantity Surveying are available in several of the Institutions in Nigeria, and as long as all of the requirements are met by the candidates, they may be admitted into any institution of their choice. However, students who took technical subjects or attended technical school stand a good chance of excelling in these disciplines.

### **Stage 3: Entry into the construction industry**

At the end of their studies, graduates are expected to enter into professional practice in the areas of study for which they were trained. However, this does not hold true in all cases. The enabling factors of role models and the prestige associated with doing work that is generally considered "men's work" could serve to encourage more women to enter the construction industry. However, overcoming the challenges of family responsibilities, cultural/religious obligations and the nature of the industry becomes the determining factor as to if they would be attracted and recruited into the construction industry or if they would depart to other, more accommodating sectors. The female graduates' internal competencies (personal attributes, characteristics and abilities, Ling and Poh, 2004: 431) could be developed by adopting the strategies identified by women in practice.

### **Stage 4: Retention in the construction industry**

The translation of qualification into employment is only one aspect driving the motivation for an improved representation of women in the construction industry. The flip side is dealing with the "leaky pipeline" aptly described by Gurjao (2006: 28) as the "tendency of dropping off the career ladder..." where women are educated and become qualified and employed but, somewhere within their career, depart from the industry. This phenomenon can be alleviated with such enabling strategies as Government policies that imbibe gender mainstreaming (for example the current Federal Government efforts to achieve 35% affirmative action [Federal Ministry of Women's Affairs and Social Development, 2006]). Here too, the functions of Role models/mentors and women chapters of professional bodies serve to create an environment that may attract more women. Job satisfaction as well as promotions will also contribute to ensuring that women are retained in the construction industry. The challenges that women face, particularly with respect to family responsibilities, are more constraining in the early phase of career development. Over time, they learn to overcome these challenges through

networking, personal development and working with their priorities, which allow them to develop within their careers. Good practice mechanisms to combat barriers at this stage include introducing positive role models, work placement opportunities and building support networks.

### **Stage 5: Career progression**

This is an all-encompassing stage that starts from the earliest education and lasts all the way through the economically active life of a woman. However, the consideration here is of the progression of a professional woman's career within the construction industry and is actively pursuing her career therein. The decision of a woman to continue in a career depends on her ability to obtain satisfactory remunerations, agreeable socialisation opportunities and vertical progression (promotions).

One strategy suggested by a respondent is to focus more on a career and suspend getting married and/or having children until one has achieved a comfortable level of career growth. This is, however, an extreme strategy that is not compatible with the African societal culture and family expectations where women are expected to marry and have children. Women are under pressure to forgo or delay childbirth and, for those who already have children, to hide their existence. Often pregnancy is considered an event that could potentially jeopardise one's career progression.

The developed framework will assist women with planning their careers in the construction industry by addressing those issues identified as being crucial for successful career development at each phase. This will serve as a means of attracting and retaining them in the industry.

## **CONCLUSION**

To gain a complete and more balanced view of the barriers women face, this study investigated the barriers faced by women in professional practice in the Nigerian construction industry. The findings suggest that the barriers that women face in the construction industry are globally similar. The uniqueness of the traditional and patriarchal system, which exists in Africa, exacerbates these barriers. Additionally, the cultural and religious dimensions also introduce a challenge that does not exist in most developed nations. The women emphasised on the need to learn to balance work and family responsibilities, noting that this is more difficult in the early stages of career development and that it becomes easier to manage over time. It is also important for women to participate in professional bodies, develop further in areas of specialisation and seek mentors/role models who can educate them on the best career options available for them in the industry.

## RECOMMENDATIONS FROM THIS RESEARCH

The following recommendations are offered in light of the findings from this research:

1. The framework developed is useful for attracting and retaining women and it is recommended for use by the following:
  - a. Female students: this will help in career development.
  - b. Academic institutions: to help the relevant stakeholders identify strengths and weaknesses inherent in training female students and ways to mitigate the problems.
  - c. Female practitioners: to help in mentoring younger women in construction.
  - d. The Government: the framework provides a working document for ministries in charge of women affairs and development to help in the preparation of policy documents.
2. There is a need to promote the construction industry in secondary schools as a means of creating awareness. This could be performed by various construction related professional bodies and regulatory bodies. This addresses the issue of attracting women into construction.
3. It is recommended that the female members of professional bodies organise seminars and workshops to be delivered yearly at all institutions addressing construction related disciplines. These seminars would address specific barriers that exist in the industry, practical steps on how to overcome them and allay any fears graduates may have about working in the construction industry. This will provide opportunities for mentoring, networking and professional development that would lead to the retention of women in practice.

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