Global Journal of Researches in Engineering
Industrial Engineering
Volume 12 Issue 2 Version 1.0 Year 2012
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4596 Print ISSN:0975-5861

An Appraisal of Career Development Among Female Professionals in The Nigerian Construction Industry

By Babatunde Solomon Olusola, Babalola Olubola & Opawole Akintayo
Obafemi Awolowo University

Abstract - There are limited empirical studies on factors preventing female professionals from working in the construction industry. Thus, this study becomes imperative with a view to identifying and assessing the career development programmes and strategies as well as the impediments relating to career development programmes. The primary data consists of survey questionnaire, drawn on the basis of the identified career development programmes and the impediments relating to career development programs on existing literature. Random sampling technique was employed in the administration of the questionnaire to professional in consulting and contracting firms within the built environment in Lagos metropolis, Nigeria. The data were analyzed using statistical methods of average, percentage, mean score (MS), Kruskal Wallis H test and Mann Whitney's U test. The results of the mean score ranking indicate factors influencing female professionals' participation in construction industry. However, the result of the Kruskal Wallis H test and Mann Whitney U test support null hypothesis.

Keywords : Female professional, Career development, Construction industry, Nigeria, Strategies, Impediments.

GJRE-G Classification: FOR Code: 090599

Strictly as per the compliance and regulations of:

An Appraisal of Career Development Among Female Professionals in the Nigerian Construction Industry

Babatunde Solomon Olusola [α], Babalola Olubola [σ] & Opawole Akintayo [ρ]

Abstract - There are limited empirical studies on factors preventing female professionals from working in the construction industry. Thus, this study becomes imperative with a view to identifying and assessing the career development programmes and strategies as well as the impediments relating to career development programmes. The primary data consists of survey questionnaire, drawn on the basis of the identified career development programmes and the impediments relating to career development programs on existing literature. Random sampling technique was employed in the administration of the questionnaire to professional in consulting and contracting firms within the built environment in Lagos metropolis, Nigeria. The data were analyzed using statistical methods of average, percentage, mean score (MS), Kruskal Wallis H test and Mann Whitney's U test. The results of the mean score ranking indicate factors influencing female professionals' participation in construction industry. However, the result of the Kruskal Wallis H test and Mann Whitney U test support null hypothesis. Also the result of the mean scores further show career development programmes and strategies, the result of Kruskal Wallis H test and Mann Whitney U test were significant. Finally, the result shows the impediments to career development programs and strategies. The study revealed career development programmes and strategies, this would provide necessary information to the government, stakeholders and employers of labour in the construction industry to ameliorate skilled shortages, enhance productivity and performance in the construction sector.

Keywords : Female professional, Career development, Construction industry, Nigeria, Strategies, Impediments.

I. Introduction

Construction industry is considered the world's largest industrial employer with estimated 111 million employees. This means that construction is a vital contributor to global development through the provision of jobs Confederation of International Constructor's Association (CICA, 2002). In developing countries, construction industry which comprises primarily the building and civil engineering industry has been a major contributor to the economic growth of the countries through the provision of residential accommodation, social services and utilities, industrial and recreational facilities. According to Foong-ming (2008), the availability of career development opportunities illustrates the willingness and effort of the organization (construction industry) to cherish employees. Generally, organizations that provide relevant quantity and quality development schemes are signaling to employees their likeliness to develop a cadre of skilful employees to grow together with the business. Huselid (1995) suggested that Progressive Human Resources (PHR) practice that embraces career related practices could improve knowledge, skills and the abilities of an organization's current and potential employees, and enhance the retention of quality employees. Career development thus focuses on the personal and organizational success of professionals (Swanson and Holton, 2001).

Well defined career has well defined path outlining career advancement and career development opportunities including experiences, licenses and certifications, skills and training (Strategic Skills Initiative, 2005). The lack of career advancement opportunities in careers has been researched as one of the reasons why professionals become dissatisfied with their jobs and leave companies (Crawford, 2002). Additionally, career satisfaction and career commitment research cornerstones for identifying satisfying successful careers were based on professionals' perceptions. Crawford (2002) asserted that one of the major reasons why moderately defined career professionals leave a company is the lack of a clearly defined career path.

Construction industry needs to consider the career development activities that are provided to support career path advancement including training and development and certifications in order to retain female professionals and promote productivity for organizations success. Also, Ling and Leow (2008) concluded that in order to retain graduate women in the construction industry, it is recommended that employers should introduce flexible work schedule; allow graduate women to work from home; and give them the same opportunities as their male counterparts. According to Parker and Skitmore (2005) continued career development is paramount to a job satisfaction and reduced job turnover regardless of experience level. To that end, the extent to which individuals feel that they have a direction or purpose and the influence this perception has on the jobs and career related affects performances.

Author α, σ, ρ : Department of Quantity Surveying, Obafemi Awolowo University, Ile-Ife, Nigeria.
Correspondence E-mail : sholly_intl@yahoo.com

A healthy construction industry is vital to the physical regeneration of regions, but this is being hampered by potential skill shortages facing the industry. The global construction industry suffers from inadequate supply of skilled labour. For instance, Flood (2004) alarmed on the risk of "a chronic shortage of skilled workers", in the Canadian Construction Industry. The construction industry could reduce skill shortage by drawing from the rich reserve of female professional in the labour force (Mbachu & Folose, 2005). Adeyemi et al (2006) asserted that in Nigeria, female resource represents about half of human resources and for optimal utilization of human resources, it is considered that women should be adequately represented in the construction industry which is the prime motivator of the country's economy.

According to Fisher (2007), recently more than ever, the construction industry offers women tremendous opportunities for employment, entrepreneurship and financial security, but women/female professionals represent a huge untapped resource for an industry begging for skilled labour and talented professionals. The issue regarding the lack of female professionals in construction industry has become more prominent recently, attracting government and industry wide attention due to this potential skill shortage facing the industry. The constraints to female professionals' participation in the industry must be identified, and effective strategies devised to improve the construction industry's share of women in the labour force.

II. Literature Review

a) *Nature of the construction industry*

The construction industry is not homogeneous; it embraces a wide range of activities, products and skills. It includes design, building, civil engineering, oil and gas, heavy engineering, design and consultancy, companies manufacturing and fabricating components and products used by the industry. According to Chartered Institute Of Building (CIOB, 2006), the construction industry has changed significantly over the past decade with new forms of procurement, partnering arrangement, increasing use of design and build with more integration between design and production, greater use of off-site pre-fabricated components, customization of standard components, a new culture of health and safety, more use of product skills as opposed to trade skills, and more specialization.

The workforce has changed to meet the new demands, but a skill gap is emerging with fewer young people seeing the construction sector as the employer of choice. The skill gap shortage is a threat to the industry if it wants to remain competitive and improve its productivity and performance (CIOB, 2006). In the UK, the construction industry has the second highest level of skill shortages as a percentage of total workforce vacancies. CIOB (2006) stated that continued growth within the sector, fuelled by increase in government expenditure has placed a strain on the construction labour market to keep up with increasing skills demands. This skill demand threatens the industry's ability to deliver projects on time and budget to clients' satisfaction over the next few years. Thus, the government's pledge on improving the industry's performance are unlikely to be met unless there is a stable, skilled, motivated and available workforce. The Equal Opportunities Commission (EOC, 2005) observed that under-representation of women in sectors experiencing skills shortages is exacerbating these shortages. The EOC says breaking gender barriers will help solve skill shortages.

Therefore, construction employers need to access a wider pool of talent from a more diverse range of people in terms of gender in order to recruit and develop a high quality workforce that is motivated and skilled to meet growing construction needs. Hence, female professionals are needed at all levels, in management, design, trade skills and in all the various parts of the supply chain.

b) *Status of female professional in the construction industry*

Adeyemi *et al* (2006) revealed that women constitute only 16.3 percent of the workforce in the Nigerian construction industry, of which 50 percent are administrative staff, 10 percent employed as professional and management staff, and 2.5 percent as craftswomen. However, Construction Industry Training Board (CITB, 2005) observed that women still constitute only 9 percent of the workforce in the UK construction sector, of which 84 percent held secretarial posts, nearly 11 percent are employed in a professional capacity and the remaining are craft and trade level employees. According to Shanmugam *et al* (2006), the UK Construction Industry is at its busiest for a decade and is suffering from skill shortages in both craft and manual trades, and at the professional level. In addition to the skilled shortages, the shortages of female professional workers are even more striking. Shanmugam *et al* (2006) noted that the issue regarding the lack of women in construction has been a concerned for many years, attracting government and industry wide attention. The issue has been made more prominent recently due to the potential skill shortage facing the industry. In order to meet these targets the industry cannot rely on recruiting the traditional male-dominated workforce.

According to CIOB (2006), construction industry is facing a 'demographic time-bomb' that is, the pool of traditional male applicants is contracting and the current workforce is ageing leading to problems of skill shortage and recruitment. Therefore, there is a need to tap the talents of the 'other half' of the workforce, that is, the female professionals. This appears to be the driving

force to encouraging female professionals into the industry. Recruitment is only one side of the coin, the issue of retention is the other. There are two dimensions to the issue of female professionals in the Nigerian construction industry: firstly, female's apparent reluctance to enter the industry, and secondly, the experience and opportunities for progression on entry.

The barriers to the entry of female professionals into the industry begin in the early socializing and education, and continue throughout the training and recruitment. These barriers are further exacerbated by the industry as it continues to foster a male only image and remain entrenched in a culture which undermines the value of women (Fielden *et al;* 2000). Amaratunga (2006) asserted that women are confronted by a significant number of barriers, beginning with difficulties in joining the field of construction through to capturing the most senior position in the organization's hierarchy. The barriers to female participation in construction industry had been studied by a number of researchers. For instance, Fielden *et al* (2000) identified the barriers to female participation in construction industry as the construction industry's image; career knowledge among children and adults; selection criteria and male dominated courses; recruitment practices and procedures; sexist attitudes; male dominated culture; and the work environment. Gale (1994) identified barriers as image of the construction industry, knowledge as a determinant of career choice and organizational culture. Dainty *et al* (2000) identified the barrier as culture and working environment. Lingard and Lin (2004) identified family commitments as the barrier for participation of women in construction industry.

c) Overview of career development

Career development refers to the long term personal and professional growth of individuals (London, 1993). The availability of effective career development practices not only heightens the growth and self esteem of employees for them to utilize skills and knowledge, it could also serve as an important link to retain good employees to stay with the organization (Eisenberger et al, 1986 cited in Foong-ming, 2008). Adopting findings from Rhoades and Eisenberger (2002), the study suggests organizational reward, promotion, supervisory support and career development opportunities for employees to reduce turnover.

Career development involves an organized, formalized, planned effort to achieve a balance between an individual's career needs and the organization's workforce requirements (Leibowitz, Fareem and Kaye, 1986, Lips-Wiersma and Hall, 2007). The decision for employees to stay or leave might depend on whether or not they gain support at work and personal growth. This requires employers to provide resources, tools, and the appropriate environment to ensure continued self-development. Therefore, career development is about the development of employees. This is beneficial for both the individual and the organization. Effective career development programs enhance individual work performance by continuously learning and adapting, while the organization offers favourable developmental relationships with their employees (Foong-ming, 2008). It is a complex process that shapes the career of the individuals over their life span. Lips-wiersma and Hall (2007) suggested career development as the outcome of interaction between individual career planning and institutional career management processes. Thus, career development must not be a one time event, but be over a longer period of time (Leibowitz *et al,* 1986).

Learning and adaptability are important for female professionals to strive for career success. Similarly, Rhoades and Eisenberger (2002) suggested training and exposure may imply a high level of concern for organizations to extend employees' potentials in the organization. Employees who receive such developmental opportunities are more motivated and have more confidence in their work. Subsequently, employees who receive such opportunities might repay their organization with the likeliness of extending their self-fulfilment, leading to reduce turnover. Lingard and Lin (2004) concluded that construction firms aiming to improve organizational commitment among female employees should ensure women have access to career development opportunities and ensure just processes are used in allocating organizational rewards.

d) Career development programs

According to Russell (1991), organizational interventions that are used in career development programs are defined as "any efforts by organizations to assist individuals in managing their careers and to help organizations meet their goals. These efforts may consist of strategies, policies or programs ranging from informal and unstructured to highly formal and structured. Russell (1991) further illustrated that the interventions enclosed in the programs should address the internal or the external career and are designed to meet human resource needs that may influence the career development of employees. Kappia *et al* (2005) identified impediments relating to career development as apathy, external funding issue, commitment to work role, institutional issues, access, external commitments and accessibility. These career development programs and impediments relating to career development programs are subjected to empirical evaluation with respect to the Nigerian construction industry in this study.

III. Research Method

Data for the study were collected through the use of well-structured questionnaire administered on professionals in consulting firms and contracting firms in the Lagos metropolis. The professionals include architects, builders, quantity surveyors, estate surveyors & valuers, town planners and engineers. The study area

was restricted to Lagos metropolis in Southwestern Nigeria because 60-65% of head offices of both consulting and contracting firms were located in this area. The questionnaire had two sections A and B. Section A encompasses personal information of respondents which includes types of organization, designation of respondents, academic qualifications, years of working experience, marital status and sex of respondents. Section B relates to objectives of this research which are to examine factors influencing female professionals' participation in construction industry; to identify and assess the career development programs and strategies for attracting and retaining female professionals in the construction industry and to evaluate the impediments relating to career development programs. The questions were asked on a 5-point likert scale rating with 5 being the highest of the rating. One hundred (100) copies of questionnaire were administered to randomly selected professionals in both consulting and contracting firms in the study area. A total of sixty five (65) copies representing 65 percent were collected and found suitable for the analysis. The data collected were presented in tables and analyzed through Statistical Package for Social Sciences (SPSS) using mean score, Kruskal Wallis H test and Manny Whitney U test.

Hypothesis Testing 1

H_O : There is no significant difference in the perception of respondents regarding to barriers that influence female professionals' participation in construction industry with regards to (i) type of organization (ii) age and (iii) gender.

H_1: There is significant difference in the perception of respondents regarding to barriers that influence female professionals' participation in construction industry with regards to (i) type of organization (ii) age and (iii) gender.

Hypothesis Testing 2

H_O : There is no significant difference in the perception of respondents regarding to career development programs with regards to (i) marital status (ii) years of professional experience and (iii) age.

H_1: There are significant difference in the perception of respondents regarding to career development programs with regards to (i) marital status (ii) years of professional experience and (iii) age.

Hypothesis Testing 3

H_O: There is no significant difference in the perception of respondents regarding to impediments relating to career development programs with regards to (i) marital status and (ii) academic qualification.

H_1: There is no significant difference in the perception of respondents regarding to impediments relating to career development programs with regards to (i) marital status and (ii) academic qualification.

IV. Data Analysis and Discussions

The types of organization of the respondents indicate that 72.31% of respondents were from consulting firms and 27.69% of respondents were from contracting firms. The percentage representation of professional designation of respondent is as 70.80% quantity surveyors, 12.30% engineers, 10.80% architects, 4.60% builders and 1.50% town planner. Among these, 1.5% possess National Diploma, 21.5% possess Higher National Diploma; 9.3% are holders of Postgraduate Diploma; 46.2% holds Bachelor of Science; 20.0% holds Master of Science; and 1.5% holds Doctoral Degree. Moreover, the respondents professional years of experience in the construction industry show that 50.8% have 0 – 5 years of working experience, 29.2% have 6 – 10 years experience, 10.8% have 11 – 15 years of experience and 9.2% have 16 years or above 16 years of working experience in the construction industry. Also, the age range of respondents indicate 13.8% are within 21- 25 years old, 35.4% are 26 -30 years old, 36.9% are 31 -35 years old, 6.2% are 36 -40 years old, 4.6% are 41 -45 years old and 3.1% are 45years of age above. The gender of respondents reveals that 72.3% are male while 27.7% are female. Also, the marital status of respondents indicates that 52.3% are single and 47.7% are married. Moreover, the percentage representation of respondents' level of satisfaction with their current position in construction industry show 23.0% are very satisfied, 66.2% fairly satisfied and 10.8% are less satisfied.

Table 1 shows the mean score of the ranking of respondents with respect to factors influencing female professionals' participation in the Nigerian construction industry. The table shows that masculine nature of the jobs requirement and family commitments ranked highest with mean scores of 3.86 and 3.86 respectively, followed by nature of the construction industry with mean score of 3.62. Gender discrimination ranked fourth with mean score of 3.49. While lack of career progression, poor image of the construction industry, lack mentoring and recruitment policies and procedures ranked least with mean scores of 2.49, 2.69, 2.75 and 2.86 respectively.

Table 1: Factors Influencing Female Professionals' Participation in the Nigerian Construction Industry.

S/N	FACTORS	1 VL	2 L	3 M	4 H	5 VH	SWV	MS	MD	RANK
i	Nature of the construction industry	4	12	45	64	110	235	3.62	0.46	3
ii	Social-cultural perceptions and orientation	3	18	75	76	45	217	3.34	0.18	5
iii	Poor image of the construction industry	14	32	51	48	30	175	2.69	-0.47	12
iv	Gender discrimination	5	16	45	96	65	227	3.49	0.33	4
v	Discouragement due to male attitude	7	28	72	56	25	188	2.89	-0.27	8
vi	Fear of competition within men	13	24	60	40	50	187	2.88	-0.28	9
vii	Masculine nature of the job requirement	0	18	39	84	110	251	3.86	0.70	1
viii	Family commitments	1	8	57	80	105	251	3.86	0.70	1
ix	Recruitment policies and procedures	6	30	81	44	25	186	2.86	-0.30	10
x	Lack of career progression	10	44	66	32	10	162	2.49	-0.67	13
xi	Female preference for some jobs to others	7	26	39	64	80	216	3.32	0.16	6
xii	Lack of mentoring	13	24	72	40	30	179	2.75	-0.41	11
xiii	Salary and wages compare to other jobs	8	28	54	60	50	200	3.08	-0.08	7

Source : Authors' Field survey (2011; Factors were extracted from Mbachu, and Folose, 2005).
NB: 1- Very Low, 2- Low, 3- Moderate, 4- High, 5- Very High.

Hypothesis Testing 1

Null Hypothesis 1 (H_O) : There is no significant difference in the perception of respondents regarding to factors influencing female professionals' participation in construction industry with regards to (i) type of organization, (ii) age and (iii) gender.

Alternative Hypothesis 1 (H_1) : There is significant difference in the perception of respondents regarding to barriers that influence female professionals' participation in construction industry with regards to (i) type of organization, (ii) age and (iii) gender.

To test this hypothesis, the rankings provided by the respondents were summed up and subjected to test of differences in the ranks using Kruskal Wallis H test for type of organization and age while Manny Whitney U test was used for gender. The results are presented in tables 2 to 4.

Table 2 : Test of difference in rankings on the basis of organizations.

Types of organization	N	Mean Rank	Kruskal Wallis H Test χ^2	Df	P
Constructing	16	37.44	2.347	2	0.126
Consulting	46	29.43			
Missing	3				
Total	65				

Table 2 shows the result of the test in rankings provided for the factors influencing female professionals' participation in construction industry on the basis of the type of organizations. The table reveals that $\chi 2$ value obtained is 2.347 at P= 0.126. Since the p-value surpassed the 0.05 threshold, the null hypothesis is accepted. Therefore, it can be concluded that with respect to type of organizations within the construction industry, there is no significant difference in the perception of respondents concerning the factors influencing female professionals' participation in the construction industry.

Table 3 : Test of difference in rankings on the respondents' age.

Age	N	Mean Rank	Kruskal Wallis H Test		
			χ^2	Df	P
21-25yrs	9	32.28	2.299	3	0.513
26-30yrs	23	30.15			
31-35yrs	23	31.09			
36-40yrs	4	17.75			
Missing	6				
Total	65				

Table 3 shows the result of the test in rankings provided for the factors influencing female professionals' participation in construction industry on the basis of the respondents' age. The table indicates that $\chi 2$ value obtained is 2.299 at P = 0.513. Since, the P-value is greater than 0.05 thresholds, null hypothesis is accepted. Hence, it can be concluded that with respect to the respondents' age, there is no significant difference in their perception concerning the factors influencing female professionals' participation in the construction industry.

Table 4 : Test of difference in rankings on the basis of gender.

	N	Mean Rank	Sum of Ranks	Manny-Whitney U	p
single	47	31.98	1503.00	376.000	0.987
married	16	32.06	513.00		
Missing	2				
Total	65				

Table 4 shows the result of the test in rankings provided for the factors influencing female professionals' participation in construction industry on the basis of their gender. The table shows that the U-value obtained is 376.000 at P= 0.987. Since, the P-value is greater than 0.05 threshold, null hypothesis is accepted. Thus, it can be concluded that with respect to gender, there is no significant difference in the perception of respondents concerning factors influencing female professionals' participation in construction industry.

Table 5 reveals the mean scores of the ranking of respondents with respect to career development programs and strategies that could be adopted to encourage and retain female professionals' in construction industry. The table shows that motivation was ranked highest with mean score of 4.14, followed by training and continuing education with mean score of 4.12. Promotion and flexible work schedules were ranked third and fourth with mean scores of 3.97 and 3.85 respectively.

Table 5 : Career Development Programs and Strategies that could be Adopted for Female Professionals in Construction Industry.

S/N	Career Development Programs	1 NR	2 LR	3 FR	4 R	5 SR	SWV	MS	MD	RANK
i	Training and continuing education	0	0	36	112	120	268	4.12	0.40	2
ii	Promotion	0	12	33	68	145	258	3.97	0.25	3
iii	Mentoring Programs	1	12	42	96	95	246	3.78	0.06	6
iv	Networking	0	12	57	96	70	235	3.62	-0.10	9
v	Motivation	1	6	24	88	150	269	4.14	0.42	1
vi	Job sharing programs	3	14	54	96	60	227	3.49	-0.23	11
vii	Tuition refund programs	4	10	69	72	70	225	3.46	-0.26	12
viii	Incentive for late retirement	2	14	39	100	85	240	3.69	-0.03	8
ix	Paid and unpaid leave bonuses	2	18	42	72	100	234	3.60	-0.12	10
x	Realistic job previews	0	12	75	88	45	220	3.38	-0.34	14
xi	Dependent care services	0	10	60	92	60	222	3.42	-0.30	13
xii	Flexible work schedules	0	12	54	64	120	250	3.85	0.13	4
xiii	Work family programs	2	12	36	76	120	246	3.78	0.06	6

xiv	Career planning workshops/ seminars/conferences	1	12	39	92	105	249	3.83	0.11	5

Source : Authors' Field survey, 2011.
NB: 1- Not Relevant, 2- Less Relevant, 3- Fairly Relevant, 4- Relevant, 5- Strongly Relevant.

Hypothesis Testing 2

Null Hypothesis 2(HO) : There is no significant difference in the perception of respondents regarding career development programs in respect of (i) marital status (ii) years of professional experience and (iii) age.

Alternative Hypothesis 2(H1) : There is significant difference in the perception of respondents regarding career development programs in relation to (i) marital status (ii) years of professional experience and (iii) age.

Table 6 : Test of difference in rankings on the basis of respondents' marital status.

Marital Status	N	Mean Rank	Sum of Ranks	Manny-Whitney U	p
single	33	32.62	1076.50	408.500	0.438
married	28	29.09	814.50		
Missing	4				
Total	65				

Table 6 shows the result of the test of rankings provided for the career development programmes and strategies for female professionals in the construction industry on the basis of the respondents' marital status. The Manny- Whitney U-value obtained is 408.500 at P = 0.438. Since the p-value is greater than 0.05 threshold, the null hypothesis is accepted. Hence, it can be concluded that with respect to marital status, there is no significant difference on the career development programmes for female professionals'.

Table 7 : Test of Difference in Rankings on the Basis of Years of Professional Experience.

Years of Professional Experience	N	Mean Rank	Kruskal Wallis H Test χ^2	df	P
0-5yrs	33	34.95	7.851	3	.049
6-10yrs	17	31.91			
11-15yrs	7	18.00			
16-20yrs	4	17.25			
Missing	4				
Total	65				

Table 7 indicates the result of the test in rankings provided for career development programmes and strategies for female professionals in the construction industry on the basis of their years of professional experience. The χ^2 value obtained is 7.851 at P = 0.049. The P-value is less than the 0.05 threshold, hence, the alternative hypothesis is accepted. Therefore, it can be concluded that with respect to years of professional experience, there is a significant difference in the perception of respondents concerning the career development programmes and strategies for female professionals working in the construction industry.

Table 8 : Test of difference in rankings on the basis of respondents' age.

Age	**N**	**Mean Rank**	**Kruskal Wallis H Test** χ^2	**df**	**P**
21-25yrs	9	29.83	8.974	3	.030
26-30yrs	22	27.16			
31-35yrs	22	34.32			
36-40yrs	4	8.00			
Missing	8				
Total	65				

Table 8 shows the result of the test in rankings provided for the career development programmes and strategies for female professionals in the construction industry on the basis of the respondents' age. From the table, the $\chi 2$ value obtained is 8.974 at P = 0.030. Since the P-value is less than 0.05, the alternative hypothesis is accepted. Thus, it can be concluded that with respect to the respondents' age, there is a significant difference in the perception of career development programmes and strategies for female professionals' working in the construction industry.

Table 9 reveals the mean scores of the ranking of respondents with respect to impediments on career development programs and strategies for female professionals' in construction industry. The table shows that external funding issue was ranked highest with mean score of 3.83, followed by family and social commitments with mean score of 3.71. Apathy, time constraint and abscondment were ranked third, fourth and fifth with mean scores of 3.60, 3.55 and 3.42 respectively.

Table 9 : Impediments to Career Development Programmes and Strategies for Female Professionals in the Nigerian Construction Industry.

S/N	IMPEDIMENTS	1 NI	2 LI	3 MI	4 HI	5 VHI	SWV	MS	MD	RANK
i	External funding issue: Lack of industry driven support for further or higher education	0	12	48	84	105	249	3.83	0.52	1
ii	Apathy: Lack of career development focus	1	14	54	80	85	234	3.60	0.29	3
iii	Access: Limited access to education training	3	32	63	72	20	190	2.92	-0.39	9
iv	Institutional issue: No suitable courses are available	16	26	54	52	15	163	2.51	-0.80	10
v	Financial constraint on the part of the employer	0	28	57	80	45	210	3.23	-0.08	7
vi	Time constraint due to intrinsic nature of the industry	0	12	69	80	70	231	3.55	0.24	4
vii	Bureaucratic structures that hinder access to further education and training	4	24	66	52	45	191	2.94	-0.37	8
viii	Family and social commitments	0	14	48	84	95	241	3.71	0.40	2
ix	Traditional and religious restriction of female to certain work types	2	28	57	48	85	220	3.38	0.07	6
x	Abscondment: Employers belief after acquiring higher qualifications, the employees would leave.	0	26	57	64	75	222	3.42	0.11	5

Source : Authors' Field survey (2011; Impediments were extracted from Kappia, Dainty and Price, 2005).

NB: 1- No Impact, 2- Less Impact, 3- Moderate Impact, 4- High Impact, 5-Very High Impact.

Hypothesis Testing 3

Null Hypothesis 3 (H_O) : There is no significant difference in the perception of respondents regarding to impediments relating to career development programs with regards to (i) marital status and (ii) academic qualification.

Alternative Hypothesis 3 (H_1) : There is no significant difference in the perception of respondents regarding to impediments relating to career development programs with regards to (i) marital status and (ii) academic qualification.

Table 10 : Test of difference in Rankings on the Respondents' Academic Qualification.

Highest Academic Qualification of Respondents	N	Mean Rank	Kruskal Wallis H Test χ^2	Df	p
ND	1	51.00	7.204	5	0.206
HND	14	26.68			
PGD	4	21.63			
BSc	30	36.95			
MSc	13	29.58			

PhD	1	12.00
Missing	2	
Total	65	

Table 10 shows the result of the test in rankings provided for the perception of impediments to career development programmes and strategies for female professionals on the basis of academic qualifications. The χ^2 value obtained is 7.204 at P= 0.206. The p-value is greater than 0.05 threshold. Hence, the null hypothesis is accepted and it can be concluded that with respect to academic qualifications, there is no significant difference in the perception of respondents concerning impediments to career development programmes and strategies for female professionals in the construction industry.

Table 11 : Test of difference in rankings on the respondents' marital status.

Marital Status	N	Mean Rank	Sum of Ranks	Manny-Whitney U	p
Single	34	37.90	1288.50	360.500	0.028
Married	31	27.63	856.50		
Total	65				

Table 11 indicates the result of the test in rankings provided for the perception of impediments to career development programmes and strategies for female professionals on the basis of their gender. The U-value obtained is 360.500 at P = 0.028. Since the p-value is less than 0.05. Thus, alternative hypothesis is accepted and it can be concluded that with respect to marital status, there is a significant difference in the perception of respondents concerning impediments to career development programmes and strategies for female professionals in the construction industry.

V. Conclusion

The paper concludes that family commitments, masculine nature of the job requirement, nature of the construction industry, gender discrimination, social-cultural perceptions and orientation, female preference for some jobs to others, and salary and wages compare to other jobs respectively are the seven (7) major factors influencing female professionals participation in the Nigerian construction industry. However, the result of the Kruskal Wallis H test and Mann Whitney U test reveal that there is no significant difference in the perception of respondents regarding the factors influencing female professionals' participation in construction industry with regards to type of organization, gender and age of respondents. Moreover, the result of the mean scores reveals seven (7) career development programs and strategies that could be adopted to retain female professionals in construction industry. These include motivation, training and continuing education, promotion, flexible work schedules, career planning workshops, mentoring programs, and work family programs respectively. Finally, the study shows external funding issue, family and social commitments, apathy, time constraint; and abscondment respectively as impediments to career development programs and strategies for female professionals in the Nigerian construction industry.

The paper recommends that the identified career development programs and strategies are to be given utmost consideration by the employers and stakeholders in the construction industry in order to ameliorate the acute shortage of skilled female professionals in the construction industry.

References Références Referencias

1. Adeyemi, A. Y., Ojo S. O., Aina, O. O., and Olanipekun, E. A., (2006) "Empirical evidence of women under-representation in the construction industry in Nigeria", *Journal of women in Management Review*, 21, 567 — 577.
2. Amaratunga, R. D. G, Haigh, R. P., Shanmugam, M., Lee, A. J. and Elvitigalage, D. (2006) construction industry and women: a review of the barriers, in: 3rd International SCRI Research Symposium, Delft University, Netherlands.
3. Chartered Institute Of Building (2006) "The changing role of women in the construction workforce: http://www.rics.org/Aboutus/ourmembers/CIOB%20publishes%20women%20in%20construction%20report.html Retrieved July 26, 2011.
4. Confederation of International Constructor's Association (2002): Industry as a Partner For Sustainable Development, London, nd.
5. Construction Industry Training Board (2003) "Construction skills foresight report" http://www.citb.co.uk/pdf/research/skills_foresight_2003.pdf Retrieved July 26, 2011.
6. Crawford J. K (2002): The strategic project office: A guide to improving organization performance. New York, Marcel Dekker, Inc.
7. Dainty, A. R. J., Bagilhole, B. M. and Neale, R. H.(2000) A grounded theory of women's career under-achievement in large UK construction companies, *Construction Management and Economics,*18,pp 239-250.

8. Equal Opportunities Commission (2005) Facts about men and women in Great Britain: http://www.aoc.org.uk Retrieved June 20, 2008.
9. Fielden, S. L., Davidson, M. J., Gale, A. W. and Davey, C. L. (2000) Women in construction: the untapped resource, Construction Management and Economics, 18, Pp 113 – 121.
10. Fisher, C. (2007) Women: construction untapped resource.http://www.acppubs.com/article/CA6469834html Retrieved on July 2, 2008.
11. Flood, T. (2004) New research spurs construction sector council: http://www.csc-ca.org/English/whatsnew3.html. Retrieved on June 19, 2008.
12. Foong-ming, T. (2008) "Linking career development practices to turnover intention: The mediator of perceived organizational support. Retrieved on July 26, 2008.
13. Gale, A. W. (1994) Women in non-traditional occupations: the construction industry, *Women in Management Review,* 9(2), Pp3- 14.
14. Huselid, M. A. (1995), "The impact of human resource management practices on turnover productivity and corporate financial performance", *Journal of Academy of Management*, 38, 635 — 672.
15. Kappia, J. G., Dainty, A. R. J. and Price, A. D. F. (2005) Towards a qualitative career development agenda, Association of Researchers in construction (ARCOM)Doctoral Workshop on skills, Training and Development in the construction industry held at School of the Built Environment Northumbria University.
16. Leibowitz, Farren, Z. B and Kaye, B. L. (1986), Designing Career Development Systems: 1st Edition, San Francisco; Jossey-Bass Publishers.
17. Lingard, H. and Lin, J. (2004) Career, family and work environment determinants of organizational commitment among women in the Australian construction industry, *Construction Management and Economics*, 22, Pp 409–420.
18. Ling, F. Y. Y. and Leow, L., (2008) Enabling knowledge flow: retaining graduate women in the singapore construction industry, Journal of Construction in Developing Countries, 13(2), Pp 65-81.
19. Lips-Wiersma M. and Hall D. T. (2007), "Organizational career development is not dead": a case study on managing the new career during organization change. Journal of Organizational Behaviour, 28, 771 — 792.
20. London, M. (1993) "Relationships between career motivation, empowerment and support for career development": *Journal of Occupational and Organizational Psychology*, 66, 55 — 69.
21. Mbachu, J. I. C, and Folose, M. (2005), Under-representation of women in the South-Africa Construction Industry, Conference proceedings held at The Queensland University of Technology, Brisbane, Australia.
22. Parker, S. and Skitmore, M (2005) "Project management turnover": causes and effects on project performance international, *Journal of Project Management*, 23, 205 — 214.
23. Rhoades, L. and Eisenberger, R. (2002) "Perceived organizational support": A review of the literature. *Journal of Applied Psychology*, 87, 698 — 714.
24. Russell J. E. A (1991), "Invited Contribution Career Development Interventions in organisational": Journal of Vocational Behaviour, 38, 237 — 287.
25. Shanmugam, M; Amaratunga, D., Haigh, R; and Baldry, D. (2006), 'Construction and women: The lessons construction can learn from other sectors, proceedings of the Annual Research Conference of the Royal Institution of Chartered Surveyors (RICS) held at University College London.
26. Strategic Skill Initiative (2005), Selecting the critical occupations and skill sets. www.indiana.edu/ssi/guide Retrieved July 25, 2011.
27. Swanson, R, and Holton, E. F (2001), Foundation of Human Resource Development, San Francisco: Berrett-Keehler Publishers, Inc.