

Limitation to Engineering Career in Nigeria: Women's Access to Labour Market

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Presentation Outline

- Introduction
- Background
- Objectives
- Research Approach
- Results
- Conclusions and Recommendations

Introduction

- The development and welfare implications of gender outcomes (such as gender differences in employment, education and pay, empowerment of women in science and engineering) have been recognized, and debates on women have assumed prominence on the global agenda over the last decades.
- Achieving gender equality in science and engineering is considered a very critical ingredient to reducing poverty and achieving economic growth and has become a development objective in its own right.
- Engineering plays a central role within society and its professionals, the engineers, are one of the main actors operating as a part of a complex network of mutual relationships between many other people, organizations and groups.
- Women's access to the labour market in recent decades has not encouraged women to choose engineering careers, nor to believe in their own capacity for the job. In fact, the number of women in engineering education and careers is still low in Western countries, despite efforts to improve the proportion of women engineers ((Badekale, 1992, Mills, Gill, Sharp, & Franzway, 2011).

Background of Study

- Employment difficulties and under-representation of Nigerian female engineering graduates of women deserve serious attention.
- In engineering workplace cultures, women place themselves and are placed by others in a way that makes them **visible as women** and **invisible as engineers**, limiting the recognition of their working capabilities and undermining their self-confidence and self-esteem (Faulkner, 2007, 2009).
- New feminine values (**Prudence, active responsibility, protection, saving, commitment**) are strongly emerging, contrasting with the fact that, for several reasons, scientific and technical careers have traditionally been a male preserve and that access by women to technical professions such as engineering is still very restricted (Hawks and Spade, 1998; Henes et al., 1995; Thom, 2001).

Masculinity and Feminization of Engineering

- A cursory glance at the different engineering fields all over the world and in Nigeria particularly reveal that the fields are dominated by men and the profession regarded as a male domain.
- Walton (1986) reported, societies do not expect women to become scientists and those that do are seen to step “out of line”. As a response to this restriction, women are under-represented in the fields.
- Thus, women until recently formed a small percentage of total enrolments in engineering departments right from inception of the profession

Trends in Enrolment in Selected University Faculties of Engineering

Year	Enrolled				
	Male	Female	Total	% Female	Attrition Rate for both sexes
1967/68	1,406	4	1,410	0.2	44%
1968/69	604	5	609*	0.8	52%
1971	3,354	101	3,455	3.0	N/A
1974/75	1,983	104	3,087	3.3	N/A

* Decrease could have been affected adversely by the civil war, which resulted in the closure of the University of Nsukka.

N/A = Not Available.

Student Enrolment by Sex in Engineering and Technology, 1979 - 1986

Year	University	M	F	Total	% F
1979/80	ABU, Zaria	431	6	437	1.4
1980/81	All Universities	234	64	2,405	2.7
1981/82	All Universities	3,580	156	3,736	4.2
1985/86	UNN, Nsukka	1,078	22	1,110	1.98

Source: Compiled from STAN (1992) and University Digest of Statistics for the years.

Enrolment by Sex in Engineering, University of Ife, 1983/84

Sex	Agric. Eng.	Chemical Eng.	Civil Eng.	Electrical & Electron Eng.	Mechanical Eng.	Metal Eng.
Male	63	102	123	177	118	67
Female	1	15	15	10	1	3
Total	64	117	124	187	119	70
% Female	1.6%	12.8%	0.8%	5.3%	0.8%	4.3%

Source: Adapted from Osibodu (1985)

Total Enrolment by Sex in Engineering Education Between 1983 and 1993 in Nigeria

Year	Sex		Total	% F	% F Increase
	M	F			
1983/84	8,541	452	8,993	5.0	-
1984/85	9,525	501	10,026	5.0	-
1985/86	10,668	604	11,272	5.7	-
1986/87	11,708	847	12,555	7.2	-
1987/88	12,982	982	13,964	7.6	7.6
1988/89	13,039	973	14,012	7.5	-
1989/90	13,372	871	14,243	6.1	-
1990/91	N/A	N/A	N/A	N/A	-
1991/92	N/A	N/A	N/A	N/A	-
1992/93	N/A	N/A	N/A	N/A	-

N/A = Not Available

Source: NUC Statistical Digest (1980-1986)

Academic Staff in Engineering and Technology in all Nigerian Universities, 1980/81 - 1989/90

Year	Male/Female	Female	% Female
1980/81	572	17	2.9
1981/82	745	8	1.1
1982/83	761	29	3.7
1983/84	772	22	2.8
1984/85	837	27	3.2
1985/86	869	50	5.75
1986/87	529	20	3.8
1987/88	941	32	3.4
1988/89	*	*	*
1989/90	*	*	*

* Nil

Source: National Universities Commission (1991)

Female Engineers and Engineering Jobs

- In the recent past, efforts towards rectification of this imbalance have been preliminary and limited mostly to establishing the correct state or index of female participation in universities without corresponding effort in accessing jobs in the industries.
- It is thus imperative that action be set in motion for in-depth assessment of strategies for increasing female participation in specific fields of engineering and towards generalised initiation of policy to achieve the growth.
- Thus, the present study aims to present evidence on factors for and the status quo of female participation in engineering in Nigeria

Objectives

The general objective was to assess women's participation in engineering career in Nigeria and performed a strengths, weakness, opportunities, and threats (SWOT) analysis in order to create a strategic concept in engineering career development for engineering women in Nigeria.

Specific objectives:

- To generate information on the feminization rate in engineering disciplines;
- To identify factors which discourage women from choosing/continuing with engineering career;
- To identify, through examination the experience of women in engineering, employment conditions which discourage women from taking up or continuing with careers in engineering;
- To investigate reasons for female participation differences in various engineering fields.

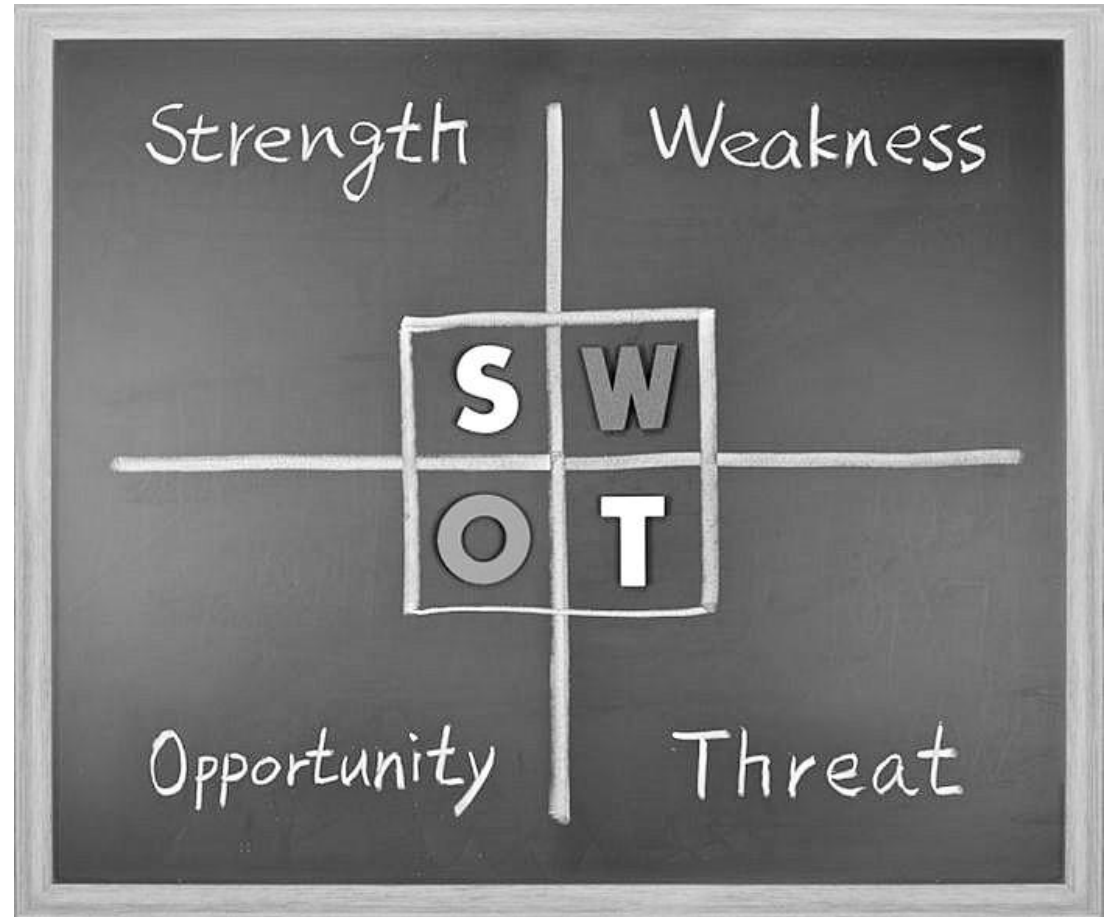
Method

- The study assessed graduate women in engineering career from different institutions in Nigeria.
- They were interviewed on the merits, demerits and influence of gender equality with regards to career development, strengths and weaknesses of female engineers and their access to the labour market.
- Different factors that influenced their access to the labour market and career strategies to realizing appropriate solutions were developed using swot analysis .

SWOT Analysis

SWOT analysis is a strategic planning method that can be used to evaluate the Strength, weakness, opportunity and threat (SWOT) of the parameters of a given data model.

- Strengths are internal characteristics that give individual an edge over others for career development
- Weaknesses are internal characteristics that are disadvantageous for career development.
- Opportunities are external chances to improve the position
- Threats are external elements in the environment that could be problematic for the position.



Results and discussion

- Women's participation in engineering career and advancement in Nigeria was found to be very low.
- Major causes were:
 - a. inability to access freely the labour market;
 - b. commitment to family life; and
 - c. family restrictions/responsibility amongst others, were barriers identified to choosing engineering careers.
- Inability to accessing the engineering labour market especially in the lucrative oil and gas sector were the major setback as the greatest source of Nigeria's foreign exchange and income is in the exploration of crude oil.

Swot Analysis

Strength

- Establishing of assertive training programmes;
- “education-based” and “industry-based” schemes designed to address women’s exclusion from technological change as well as equip them with technological skills;
- career break schemes to overcome women’s general disadvantages arising from their domestic responsibilities;
- Adoption of women’s training officers;

Weakness

- Female engineering students lack role models in form of female university lecturers;
- Rigidity of a certain mind set Environment
- Limited job experience;
- differentials in the pay between male and female engineers;
- Nigerian universities and the National Universities Commission do not have any programme to encourage women in engineering.

Swot Analysis continues

Opportunity

- Access to labour market opportunities is believed to improve the lives of women
- Increase in economic growth.

Threat

- Most engineering companies had discriminatory recruitment policies;
- double standards for their male and female engineers;
- Official discriminatory practices such as slow rate of promotion;
- Barriers/prevention to specific and challenging jobs;
- Unfriendly attitude of male colleagues;
- No Job Security and Opportunity for Professional Growth

Improvement Strategies

- Not just Recruitment but Retention;
- Scholarship - Legislation of an Act on fostering and supporting girl child technical education;
- Government provision of modern facilities to arouse their interest in engineering education;
- Celebrating women engineers achievements - Provision of annual merit award by the Government for women engineers who have distinguished themselves at their workplace and Education ;
- Peer mentoring to prevent isolation and loneliness, Work place culture, Time issues, networking;
- Role Models: Influence of parents and mentors.

Conclusion

- The study found out that women are underrepresented in the exploration activities due to the nature of the job and this has the highest percentage of lucrative engineering jobs in Nigeria if not the most attractive.
- There is the need to make efforts to educate more women in engineering. More girls should be attracted, retained through positive interventions, and encouraged to practice the profession through the cooperative effort of all members of society. This becomes necessary in making Nigeria and other African countries to be among the top in the world economy.

Recommendation

- Identification of programs that work in attracting this population to engineering career and to cultivate sustaining support for those programs.
- Interested parties-policymakers, educators, science and engineering professionals, parents, and the students themselves should support and participate in these exemplary programs for young minority women.
- Women should be encouraged and made to understand that beyond the oil and gas industries that other carriers are still available and lucrative like the academics.

References

All References are acknowledged

Thanks for Listening