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Decoding Factors That Contribute to Gender Discrimination in Modern Dwelling Architecture in Nigeria

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Abstract

The building and construction industry is one of the most significant sectors contributing to Nigeria's economic and infrastructural development. Also, it is the third-largest employer of skilled and unskilled labour within the country. Architecture as a profession is a subset of the construction industry, and as obtained in other allied fields of the building and construction industry, the sector is typically male-dominated which thrives due to the highly patriarchal society borne out of religion, tradition, and culture. Hence, this study aims to determine the existence and factors that predict gender discrimination in Nigeria's architecture industry. The result of the multiple regression analysis shows that there was a statistically significant amount of variance in workplace discrimination, such that $F(2, 47) = 10.39$, $p = 0.0002$, $R^2 = 0.306$, R^2 adjusted = 0.277. While that of the correlation analysis shows that there was a moderately positive correlation between workplace discrimination and constraining factors $r(48) = 0.48$, $p = 0.0004$. This showed that several constraining (cultural and religious) factors, including sociocultural norms, values, and religious elements, contributed to the low involvement and gender-based workplace discrimination in professional architecture.

Keywords

Architecture, Constraining Factors, Enrolment, Gender Discrimination

1. Introduction

Gender refers to the cultural and social differentiation based on sexual differences, it is perceived in different classes and races in society, thus, assigning different roles to males and females (Makama, 2013). Therefore, inequalities, marginalisation, unfair treatment, and favouring of one gender over the oth-

er are described with terms such as gender gap and gender inequalities as consequences of social differentiation (Olayeni & Adisa, 2019). Several studies over the past reported a low number of female professionals in the construction industry compared to other industries (Bagilhole et al., 2000; Sang & Powel, 2012).

The architectural profession, a subset of the construction industry, is demanding and exact. Gender in the profession was a quiet topic as the domination by males was generally accepted in different professions such as law, medicine, and accounting, amongst others (Rendell, 2000; Olayeni & Adisa, 2019). Due to the high demand for physical activities which accompanied architectural training, it was assumed that the profession was suited for men only; hence, women were not allowed to participate until the end of the 19th century. The shift from purely technical to technical-theoretical learning in architectural education opened the doors to the inclusion of women in architecture. Hence, the participation of women in architecture has gradually increased in recent years (Enwerekowe, 2016). In a report published, the number of women practicing architecture profession increased by 12% in the past 5 years to 22.6%, which shows a substantial growth among female leadership in architecture profession (Zippia, 2021). Also, the percentage of women in architecture profession equally increased from 20% in 2011 to over 30% in 2022 in the United Kingdom (Enwerekowe, 2016).

However, due to the increasing knowledge of design complexity, it is demanded that architects devote more time to design and less time to practical construction (Enwerekowe & Tsok, 2017), also, advancement in technologies and related innovations requires that architectural professionals should be able to take on their ever-expanding roles to satisfy demand. The demand for a diversity of roles throws the female gender at the risk of occupational stress, job insecurity, and expected low turnover as most males in the profession feel (especially in developing countries) (Anthony, 2008).

Architecture is considered a male profession even in advanced countries such as the UK, US, Australia, and Canada with a low number of female registered architects, despite the increase in the enrolment number of women in construction-related disciplines (Caven, 2006; Philips, 2017). This can be related to culture and traditions, as women are rarely involved in building construction due to cultural norms, religious beliefs, and gender roles, which is saddening in an industry worth millions of naira. The gendering of space and architectural programs according to users, the subjective dimensions of the architectural object that can be criticized as being masculine and feminine according to specific gender stereotypes, and the fact that women's experiences of the built environment differ from men's and are underrepresented in the built environment are all addressed by gender issues in architecture (Stratigakos, 2001; Zhang et al., 2021). Several problems are addressed by the socio-professional context including the spread of the stereotypically male image of the architect, the difficulty of juggling work and family, which affects women especially because of the long hours, deadlines, and relocation to the construction site, the lack of career op-

portunities and promotion that women are facing due to the brief maternity leave, and the misattribution of work erasing women's contribution as designers (Niculae, 2012).

Nigeria has a large proportion of women in its population; thus, it is obvious that their inclusion in an industry like building construction that can boost the economy will be beneficial (Jwasshaka & Amin, 2020). The Federal Government of Nigeria increasingly recognises skill development as a crucial aspect of boosting productivity, enhancing economic competitiveness, and eliminating poverty. Therefore, empowering the sizeable female population seems to be the logical course of action, especially to achieve gender equality and women empowerment in line with goal 5 of the sustainable development goals.

This research aims to review the existence of gender discrimination in Nigeria's architecture industry and the factors that predict it. The objectives set out to achieve this research aim are identified as follows:

- To investigate gender discrimination in a professional architecture practice in Nigeria.
- To investigate the cultural and religious issues constraining gender-based participation architecture practice in Nigeria.
- To investigate the factors contributing to gender-based enrolment into architecture programmes in Nigerian tertiary institutions.
- To investigate the relationship between gender discrimination at work, cultural and religious issues, and factors contributing to gender-based enrolment in architecture.

2. Materials and Methods

2.1. Methods

A total of 50 participants practising the architecture profession and registered with the Architects Registration Council of Nigeria (ARCON) were used in this study, comprising 14 females and 36 males. The participants were above 18 years, of any ethnic group or religion and must have practised architecture profession for at least 2 years. A well-structured questionnaire was administered to the participants online and used for quantitative data collection. The participants were recruited ethically via social media and interested participants were informed about the study and that their information was to be used for research purposes.

2.2. Study Design

The study was designed to have both dependent (outcome variable) and independent variables (predictor variable). Gender discrimination in the workplace was used as the outcome variable, while the constraining factors (cultural and religious issues) and determinants of enrolment were the predictor variables.

2.3. Materials

Using a well-structured questionnaire, data were collected. The sections included

in the questionnaire are:

- **Section 1:** Demography of the participants.
- **Section 2:** Comprises 8 questions to determine gender discrimination at work, administered using a 5-point Likert scale where; strongly disagree = 1, disagree = 2, neutral = 3, agree = 4 and strongly agree = 5.
- **Section 3:** Comprises ten questions to determine the cultural and religious issues/factors that constrain the participation of a particular gender in architecture, administered using a 5-point Likert scale where; strongly disagree = 1, disagree = 2, neutral = 3, agree = 4 and strongly agree = 5.
- **Section 4:** Comprises five questions used to determine the factors that affect gender-based enrolment in architecture programs. The questions were administered using a 5-point Likert scale where; strongly disagree = 1, disagree = 2, neutral = 3, agree = 4 and strongly agree = 5.

2.4. Data Analysis

The Shapiro-Wilk test for normality was used to test the dataset if they were normally distributed, where P-value > 0.05 was considered statistically significant. Descriptive statistics such as percentage, mean and standard deviation were used to present the dataset's characteristics in tables. Multiple regression analysis was used to determine if constraining and enrolment factors predicted gender discrimination at work. Correlation analysis was also used to determine the relationship between the predictor and outcome variables p-value < 0.05 was considered statistically significant.

2.5. Ethical Considerations

The ethical implications of using humans in the research were considered. The study was conducted by adhering to the code of conduct of research and ethical approval for the study was obtained from the University ethics board before the commencement of this study. The Architects Registration Council of Nigeria (ARCON) was also made aware of the study since its members are the sample class. Participants were duly informed about their participation and were not bribed, coerced or promised rewards for participating. Participants' consent was obtained and data was collected anonymously.

3. Results

The demography of the participants is shown in Table 1. The results show that 28% of the study participants were females, and 72% were males those with bachelor's and postgraduate were 34% and 66%, respectively of participants. Most of the participants were between the age of 26 - 45 years (90%) and the remaining 10% were below 25.

Furthermore, the mean and standard deviation of the variables are shown in Table 2, workplace discrimination (M = 22.02, SD = 5.82), constraining factors (M = 28.36, SD = 8.19), and enrolment factors (M = 16.50, SD = 3.50),

Table 1. Demography of the dataset.

Variables		Percentage (%)
Gender	Female	28
	Male	72
Educational Qualification	Bachelor's	34
	Post-graduate	66
Age	Below 25 Years	10
	26 - 45 Years	90
Marital Status	Single	68
	Married	32

Table 2. Descriptive statistics of the dataset.

Variables	N	Mean	Standard Deviation	Standard Error	Lower 95% CI of Mean	Upper 95% CI of Mean	Minimum	Maximum
Workplace Discrimination	50	22.02	5.82	0.82	20.37	23.67	12	33
Constraining Factors	50	28.36	8.19	1.16	26.03	30.69	15	40
Enrolment Factors	50	16.50	3.50	0.50	15.51	17.49	9	23

which shows that the data points are spread over a range of values from the mean.

3.1. Multiple Regressions

The multiple regression analysis output presented in Table 3 and Table 4 shows a statistically significant amount of variance in workplace discrimination, such that $F(2, 47) = 10.39$, $p = 0.0002$, $R^2 = 0.306$, R^2 adjusted $= 0.277$ (Table 3). The R^2 value indicates that about 30% of the variability of the dependent variable (workplace discrimination) can be explained by the independent variables.

Furthermore, the constraining factors variable was a significant predictor of workplace discrimination, $\beta = 0.46$, $t(47) = 2.73$, $p = 0.01$; an increase in constraining factors by a unit score means a 0.46 unit increase in workplace discrimination 95% CI (0.12, 0.80). On the contrary, the enrolment factors variable was an insignificant predictor of workplace discrimination, $\beta = -0.18$, $t(47) = -0.47$, $p = 0.64$, such that a unit score increase of enrolment factors equates to a 0.18 decrease in workplace discrimination 95% CI (-0.98, 0.61) (Table 4).

3.2. Correlation Analysis

Spearman's correlation (r) test result, as shown in (Table 5) shows that there was a moderately positive correlation between workplace discrimination and constraining factors $r(48) = 0.48$, $p = 0.0004$, summarized with a scatterplot (Figure 1) and a positive correlation between workplace discrimination and enrolment factors $r(48) = 0.49$, $p = 0.0003$ summarized with a scatterplot (Figure 2).

Table 3. ANOVA output and regression model summary.

Model	Degree of Freedom	F	P-value	R Square	Adjusted R Square
Regression	2				
		10.39	0.0002	0.306	0.277
Residual	47				

P-value < 0.05 was considered statistically significant.

Table 4. Regression coefficients.

Variables	Coefficients	Standard Error	t	P-value	95.0% Confidence Interval	
					Lower Bound	Upper Bound
Workplace Discrimination	12.05	3.50	3.45	0.001	5.02	19.08
Constraining Factors	0.46	0.17	2.73	0.01	0.12	0.80
Enrolment Factors	−0.18	0.39	−0.47	0.64	−0.98	0.61

P-value < 0.05 was considered statistically significant.

Table 5. Correlations between workplace discrimination and the independent variables (constraining factors and enrolment factors).

Workplace Discrimination vs	Spearman R	P-value	N
Constraining Factors	0.48	0.0004	50
Enrolment Factors	0.49	0.0003	50

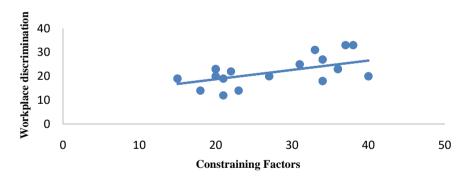P-value < 0.05 was considered statistically significant.

Figure 1. Correlation between workplace discrimination and constraining factors.
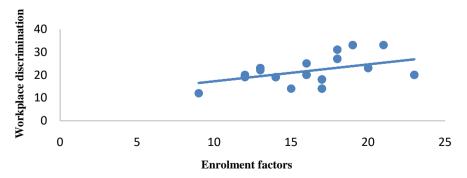

Figure 2. Correlation between workplace discrimination and enrolment factors.

4. Discussion and Conclusion

The construction industry being one of the largest employers of labour in Nigeria, contributes enormously to the GDP and economic development of the country. The industry comprises several professionals, but is mostly dominated by men. Reports have shown that women are hardly employed in the construction industry because of culture, tradition, and religious beliefs.

In this study, constraining and enrolment factors were used as predictor variables to determine workplace discrimination. This study showed evidence of workplace discrimination, as the mean score was 22.02. Furthermore, the constraining (cultural and religious) factors variable was the only significant predictor of workplace discrimination of the two predictor variables. However, both predictor variables (constraining and enrolment factors) positively correlated with workplace discrimination. The null hypothesis in this study was that constraining (cultural and religious) factors and enrolment factors would not predict gender discrimination in a professional architecture practice in Nigeria. The null hypothesis was rejected since the outcome of the regression analysis was significant (Table 4) since the p-value < 0.05 was considered statistically significant. This indicates that at least, one of the predictor variables was a predictor of workplace discrimination. Hence, hypothesis testing was done for each of the variables and only the constraining factors variable was significant in predicting workplace discrimination.

The study's outcome can be linked to several studies that have attempted to determine the factors that affect workplace discrimination, particularly in the construction industry. It is not surprising that studies are attempting to determine the causes of gender-based discrimination, as gender equality is one of the critical sustainable development goals to ensure sustainability. According to (Pokoyeuzu et al., 2012), the percentage of women participating in one sort of activity in Nigeria is 43.1%, compared to the percentage of men participating in activities of 56.9%. Because women's engagement in generating economic money has not yet been felt, this statistical measure left much to be desired. The results in this study are in accordance with the works of (Adeyemi et al., 2006), who reported that ethnic differences in sociocultural, ethics, and morals might be to blame for women's lack of interest in construction jobs in Nigeria. According to the author, some of the contributing causes include "one-man-many wives", who place a higher importance on a man's education than a woman's under the guise that a man's children are his parents' heirs, sexual harassment, a lack of confidence, and conventional or religious beliefs. Furthermore, despite the enrolment factors variable not being a predictor of workplace discrimination, it was, however, correlated with workplace discrimination which is in accordance with the report of (Akomolafe & Mohammed, 2014), who stated that women's participation and enrolment rates in Nigeria are appallingly low in both the industrial and academic facets of the construction industry. The traditional view in the Nigerian society is that men should be the only ones with construction-related abilities. These cultural beliefs are widespread throughout Africa and are not exclusive to Nigeria.

Although other factors have been reported to be responsible for workplace discrimination, one of them is the motherhood myth. Verniers and Vala (2018) believe that endowing women with particular skills for caring for children and taking care of the home ensures that conventional gender roles are perpetuated. They argued that parenting myths, in particular, are used to excuse gender discrimination against women in the workplace.

This study implies that the outcome should influence organisational structures and human resources policies such that the likelihood of making gender-biased HR-related decisions and/or behaving in a sexist manner when enacting HR policies is reduced. The outcome of this study should also be an indication for government policies to be directed toward creating an enabling work environment for all. Further studies should be carried out to consider other variables such as health and experience, which may contribute to gender-based discrimination in the construction industry.

A significant portion of women working in the construction industry in developing nations like Nigeria is solely employed as labourers or helpers, administrative personnel, catering services, management, and so forth. In this study, it was discovered that several constraining (cultural and religious) factors, including sociocultural norms, values, and religious elements, contributed to the low involvement and gender-based workplace discrimination in professional architecture. Globally, women opt to work in fields like teaching, decorating, catering, fashion design, childcare giving, etc., even when they have formal training in building construction trades, despite their dedication, hard work, and other traits. One of the implications of this is job insecurity, which is a growing concern for both genders given the difficult economic and social conditions under which the profession exists in Nigeria, the ripple effect of the societal perception of the diminishing role of the architect and deliberate responsorial action will have a greater impact on the participation of women in the profession in future given the paucity of their figures and slow growth rates. While women are still faced with the threat of rising job insecurity in Nigerian architecture due to lingering constraining factors in the profession. Work styles and attitudes in the profession (such as work-life imbalance, rigorous yet inadequate training, occupational stress, discrimination, marginalisation, declining societal appreciation, etc.) are statistically determined influences that cause higher job insecurity among women in the profession.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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