

Creating an inclusive real estate industry: assessing the enrolment, experiences and career prospects of female students in an African higher education institution

Article

Accepted Version

Chiwuzie, A., Daniel, I. D. ORCID: https://orcid.org/0000-0003-0749-3111, Ogunba, O. A. and Hahn, J. (2025) Creating an inclusive real estate industry: assessing the enrolment, experiences and career prospects of female students in an African higher education institution. Property Management, 43 (1). pp. 1-14. ISSN 263-7472 doi: 10.1108/PM-07-2023-0067 Available at https://centaur.reading.ac.uk/124623/

It is advisable to refer to the publisher's version if you intend to cite from the work. See <u>Guidance on citing</u>.

Published version at: https://doi.org/10.1108/PM-07-2023-0067

To link to this article DOI: http://dx.doi.org/10.1108/PM-07-2023-0067

Publisher: Emerald Publishing Limited

All outputs in CentAUR are protected by Intellectual Property Rights law, including copyright law. Copyright and IPR is retained by the creators or other copyright holders. Terms and conditions for use of this material are defined in the End User Agreement.



www.reading.ac.uk/centaur

CentAUR

Central Archive at the University of Reading Reading's research outputs online

Creating an Inclusive Real Estate Industry: Assessing the Enrolment, Experiences and Career Prospects of Female Students in an African Higher Education Institution

Augustina Chiwuzie

Department of Estate Management and Valuation, Federal Polytechnic Ede, Ede, Nigeria.

Dabara Ibrahim Daniel

School of the Built Environment, Oxford Brookes University, Oxford, UK.

Olusegun Adebayo Ogunba

Department of Estate Management, Obafemi Awolowo University, Ile-Ife, Nigeria.

Jonas Hahn

Frankfurt University of Applied Sciences, Frankfurt am Main, German.

Abstract

Purpose: Workspace equality and inclusivity remain critical in promoting diversity and dynamism across all sectors of the economy. Despite recent progress, gender disparities persist in the real estate sector, including education and training programmes. This study employs a quantitative research design to assess the gender diversity of real estate education at Federal Polytechnic Ede in Nigeria. The study focuses on female students' enrolment in real estate programmes, their experiences, perceptions and any potential effect on real estate career prospects.

Design/methodology/approach: A self-administered questionnaire was used to collect data from 138 out of all the 150 female students currently enrolled in the real estate programmes. Descriptive statistics and a one-sample t-test were utilised for the data analysis.

Findings: The findings indicate an increased number of females enrolled in real estate programmes. Female students face a lack of access to mentorship opportunities and perceive gender discrimination and bias in the real estate industry. However, these industry factors would not deter female students' decision to pursue a career in the real estate industry after graduation.

Originality/value: To the best of the researchers' knowledge, this study is the first to investigate gender dimensions of real estate programmes in the context of African higher education institutions, thereby contributing to the body of knowledge on gender diversity in this field.

Keywords: female enrolments, gender diversity, Nigeria, polytechnic, real estate education.

Gender and Real estate education in African higher education institutions

1. Introduction

The real estate industry plays a significant role in the global economy. As the industry continues to evolve, it is critical to examine the various factors that influence its growth and development. One such factor is gender, which has long been recognized as a significant determinant of success and access to opportunities across different fields (Dada, 2017). The real estate sector is historically male-dominated (Pauli, 2013), resulting in a gender imbalance that has been reflected in educational programs. Real estate as an academic field is taught in polytechnics and universities and is critical in preparing students for careers in property development, investment, management, and related aspects. Its gender composition has a direct impact on the demographics of future real estate professionals. However, real estate education has received little attention in gender diversity and inclusivity research, particularly in the context of African higher education institutions. This study seeks to address this gap by investigating the gender diversity of real estate education at the Federal Polytechnic Ede (FPE) in Nigeria.

Inequalities along gender lines are critical concerns in today's global educational and professional environments. These issues have gained prominence recently as women face challenges in employment (Wieczorek-Szymanska, 2020), education and social activities (Lombardi, 2017). Workspace equality and inclusivity remain essential in promoting diversity and dynamism across all sectors of the economy. Norberg and Johansson (2021) demonstrated that an environment with diverse teams and perspectives outperforms those that do not effectively implement gender-related strategies. Diversity and inclusion are priorities for high-performing organisations because they foster innovation, improve decision-making, and result in better outcomes (Clack and Gabler, 2019). However, despite a growing appreciation for diversity and inclusivity in various sectors, the real estate industry is still one of the most segregated worldwide (Mosimanegape and Ijasan, 2022). According to Oladapo (2017), the real estate sector has been predominantly maledominated, with limited representation and participation of women. Poon and Brownlow (2016) also submitted that women are under-represented and lack career prospects in the construction industry. Ugwulebo (2011) noted that the gender gap in the workplace began during the training phase. As a result, the development of a genuinely diverse and inclusive real estate sector is hampered.

According to Castellano and Rocca (2014), ensuring equal educational opportunities for women should be the first step in addressing their challenges in employment. Higher education institutions are critical in developing the next generation of professionals and can influence change (Ekene and Oluoch-Suleh, 2015). Patterson et al. (2009) also observed that women face harassment and discrimination in education and training programmes, limiting their career advancement opportunities. Education institutions are responsible for more than just selecting the brightest students; they are also responsible for assisting women and underrepresented groups in breaking down social barriers (Lenaers, 2010). Unfortunately, Bradley et al. (2009) observed that women's representation issues in higher education need more attention as there is limited scientific debate on the topic.

Recognising the importance of diversity and inclusivity, and the growing need to understand the experiences and challenges faced by women in higher education, this research investigates the enrolment rates, experiences, and perceptions of the real estate industry and career prospects of female real estate students in an African higher education institution. The aim is to foster a more inclusive and equitable profession. This study will contribute to the knowledge on women's issues in higher education by providing valuable insights into the dynamics and implications for the sustainable increase of female students in real estate programs in Nigeria and other African countries. The study acknowledges the different social, cultural, and economic dynamics that influence gender roles and possibilities for women in the African context. The overarching research question that this study seek to address include: What are the total enrolments of real estate students at Federal Polytechnic Ede, Nigeria, between 2009 and 2022? What are the percentages of female students enrolled between 2009 and 2022? What are the experiences of female students in real estate education? How do female students perceive the real estate industry? What are the female students' career prospects? It is worth noting that real estate is also known as Estate Management in Nigeria. It is taught in higher education institutions' Estate Management and Valuation Departments; therefore, the terms will be used interchangeably throughout this study. The remainder of this paper is structured as follows: the introductory section is followed by literature review in section two. Sections three and four present the methodology and the study's findings. The paper closes with a conclusion.

2. Literature Review

2.1 Female Student Enrolments in Higher Education

Women lag far behind men in global literacy and higher education statistics in scientific and technological disciplines (Ahmad, 2009). Female students enrolled in higher education institutions at a lower rate than male students (Almelhem et al., 2022; Wieczorek-Szymanska, 2020). Even if the participation trend has favoured women in advanced countries, it is still being determined whether the same trend exists in emerging countries (Ahmad, 2009). Dada (2017) posited that the proportion of women enrolled in higher education in developing countries is frequently less than half that of men. While many women enrolled in higher education, Odaga (2020) discovered this was only true in a few faculties. According to Adeyemi and Akpotu (2004), there is a significant separation between the sciences and science-based fields. Women are underrepresented in built environment courses, so changes must be made (Dada, 2017). The built environment disciplines, including real estate, are "male-dominated" and lack diversity and inclusion (Soo-Cheen, Sanmargaraja, and Soon-Ham, 2020). Research has confirmed that men predominate among real estate students enrolled in Nigerian universities (see Ayodele, 2018; Peter et al., 2017). Oladapo (2017) remarked that from the commencement of the real estate profession in the early 1970s to the present day in Nigeria, there has been a gender disparity in the enrolments of pupillage estate surveyors and valuers and students in all universities offering the course. Ahmad (2009)

discovered that there were more males in technical courses such as engineering, architecture, town planning, quantity surveying, and real estate management in Malaysia.

Existing studies have shown that the recorded percentages of female enrolments in the UK and US are mostly less than 10 per cent (see Adogbo et al., 2015; Bigelow et al., 2015; Sewalk and Nietfeld, 2013). Australian research has shown that property programs are facing challenges to their survival due to generally low enrolment rates. Wilkinson et al. (2017) reported that, although 14 institutions in Australia offer degrees in property, several of these programs are at risk of closure or losing their current status. Ojetunde et al. (2019) discovered that 45.40 per cent of women enrol in real estate at a Nigerian university. According to Peter et al. (2017), female students enrolled in Estate Management at three Nigerian universities at rates ranging from 39.9 per cent to 41.7 per cent. Studies of female enrolments in other fields reveal varying patterns. Adeyemi and Akpoku (2004) discovered that female enrolment in the humanities (education, arts, and social sciences) ranged between 35.60 per cent and 48.86 per cent. Faleye and Dibu-Ojerinde (2006) reported that the average female student enrolment in education/economics programmes is 40.5 per cent. Agu and Omenyi (2013) found an average of 50.8 per cent for female enrolment in management sciences, including accountancy, banking and finance, business administration, marketing and public administration. Momoh et al. (2020) found female student enrolment in the business to be below 30 per cent. Meanwhile, evidence suggests that female students' enrolment in maledominated courses is improving. Ahmad (2009) reported an increase in the percentage of Malaysian women enrolled in technical courses such as real estate management. Ahmad found that women's enrolment in technical courses increased from 16.2 percent in 1990 to 37.7 percent in 2007. A similar study of construction management programs at three Australian universities between 2006 and 2015 found that female enrolment in two of the universities increased from slightly below 10 percent in 2006 to above 20 percent in 2015 (Oo and Widjaja, 2018).

2.2 Female Students' Experiences, Perceptions and Career Prospects

Many factors influence a woman's career path, including personal characteristics, experiences and perspectives on the discipline and working environments (Dainty et al., 2000). According to previous research, female students studying real estate and other male-dominated disciplines face challenges such as male-dominated instructors (Adogbo et al., 2015), limited networking opportunities, difficulty finding female role models and mentors (Chiwuzie et al., 2022), discrimination (Dada, 2017; Lombardi, 2017), male culture in the classroom (Ling and Pei Poh, 2004), intimidation by the male counterpart and gender-based harassment (Dada, 2017).

Existing studies on female graduates' perceptions of the real estate industry have found that the profession is perceived to be male-dominated; roles are competitive, demanding, stressful, and require long hours (e.g., Oladapo, 2017; Adogbo et al., 2015; Ling et al., 2016). Male culture, gender stereotypes, the glass ceiling, and the lack of professional female mentors and role models are all issues in the sector (Chiwuzie et al., 2022; Astor et al., 2017). Other perceptions about the real estate industry include a lack of infrastructure that allows women to resume work after taking

time off to care for family responsibilities (Ling et al., 2014) and restrictive and extended work schedules (Barreto et al., 2017), work-life balance concerns (Barreto et al., 2017), bullying and harassment (Dainty et al., 2000), unequal career opportunities for men and women (Phathara-on et al., 2016), and a higher risk of unemployment for female real estate graduates (Poon and Brownlow, 2016).

These graduates' perspectives align with studies on professional women in the real estate industry (e.g., Olawunmi et al., 2020; Oladapo, 2017). It has been argued that women generally "build their career trajectories based on their previous experiences and perceptions of the real estate practice environment" (Chiwuzie et al. 2022, 158). Poon and Brownlow (2016) noted that women lack career prospects in the industry. The lack of professional opportunities and possibilities for women in the real estate industry is attributable to "an atmosphere of dominant masculinity" (Sagebiel, 2003) and anti-women attitudes (Dada, 2017). However, Chiwuzie et al. (2022) found that 63.4 per cent of graduating female students surveyed expressed a desire to work in professional real estate firms after graduation. Oo and Widjaja (2017) also discovered that many female construction management and real estate students confirmed their intention to remain in the industry for at least the next ten years.

Previous research results on female enrolment and career aspiration are not consistent. Furthermore, most gender diversity research has focused on a specific built environment discipline, such as construction management (Dainty et al., 2000; Francis and Prosser, 2014; Ling et al., 2016; Oo and Widjaja, 2017; Dada, 2017) or on group disciplines (Dainty and Edwards, 2003; Ahmad, 2009). Similar studies in real estate have focused on gender diversity in the industry (Mosimanegape and Ijasan, 2022; Poon and Brownlow, 2016; Oladapo, 2017). Although Ahmad (2009) and Opatoyinbo and Babatunde (2016) investigated the enrolment of estate management students, the studies classified estate management as one of the technical course groups, which included engineering, architecture, town planning, quantity surveying, surveying and Geoinformatics. Studies on gender and enrolment issues in real estate in Nigeria are scarce, particularly in the Polytechnic context, hence the need for this study. It is worth noting that the lack of gender diversity in real estate education due to low female enrolment limits the pipeline of qualified female professionals entering the industry, thus stifling its overall growth and potential.

3. Research Methodology

This research employed a case study method using Federal Polytechnic, Ede (FPE), Nigeria. According to the FPE student handbook, the Federal Polytechnic in Ede, Nigeria, was founded in 1992 as a public higher education institution. The Polytechnic has eight schools and thirty-one departments, each offering two-year programmes leading to National Diploma (ND) and Higher National Diplomas (HND) awards. The School of Environmental Studies (SES) now has five active departments: architectural technology, building technology, estate management and valuation, fashion and textile technology, quantity surveying and surveying and geo-informatics.

The estate management and valuation department launched ND and HND programmes in 2000 and 2009, respectively. The ND program is the first step, after which interested and eligible diplomats can reapply to pursue the HND. Obtaining an HND is a five-year course occurring at different levels, including two-time industrial training. To begin, students enrol in ND and, at the end of their first year, proceed on a three-month industrial training through the "Students' Work Experience Scheme" (SIWES). The second industrial training lasts one year and begins once the ND programme is completed. This field training aims to expose students to the actual world of work while also providing a platform for students to gain a sense of what the course entails. Evidence of one year of industrial training is mandatory for admission into the HND programme. The estate management and valuation department currently has a total of 309 students (150 females and 159 males) at both ND and HND programmes.

This study was conducted in two phases. For the study's first phase, data on students' enrolment in the Department of Estate Management and Valuation, FPE, from 2009 to 2022 were acquired from the department's examination officer. It should be mentioned that the Polytechnic's 2014 academic year was cancelled due to the industrial action embarked upon by the academic staff union. In the study's second phase, quantitative data were collected from all 150 female students currently enrolled in Estate Management and Valuation programmes using purposive sampling. The female students were asked to fill out a questionnaire on a five-point Likert scale (1 = strongly disagree - 5 = strongly agree). A total of 138 copies of the questionnaire were returned, representing a 92 per cent response rate. Table I contains the questionnaire items, which are essentially grouped into three categories: students' experiences in real estate education, perceptions of the real estate industry and career prospects. One major limitation of this study is that it did not use qualitative data, which would have allowed the respondents to provide appropriate feedback.

Descriptive statistics and a one-sample t-test were utilised for the data analysis. First, data on students' enrolments for ND and HND programmes in the Department of Estate Management and Valuation, FPE, from 2009 to 2022 were analysed using percentages. The analysed data were presented in bar charts and line graphs to determine the total enrolment trends and the percentages of female student enrolment trends, respectively. Second, the mean scores and standard deviations for students' responses to the individual measurement items were calculated. Third, a one-sample t-test was employed to determine the significance of the mean scores and, by extension, the student's responses. The sample's mean scores were compared to a test value of 3 (i.e., the neutral score) to determine if students at least agreed (mean score statistically greater than 3), disagreed (mean score statistically less than 3) or were neutral (mean score statistically equal to 3). Oo and Widjaja (2018) suggested that this test, in contrast to simple averaging, provides an objective assessment in selecting the item(s) that must be addressed. Before the analysis, the internal consistency of the scales employed in the questionnaire was confirmed using reliability analysis. Table 2 displays Cronbach's alpha coefficients for each questionnaire construct, indicating that all variables are reliable.

[Table I. Here]

[Table II. Here]

4. Findings

This first section presents the results of the study organised in four subheadings in line with the study's research questions. The first subheading is the total students' enrolment from 2009 to 2022. The percentages of female student enrolment, 2009 to 2022 is the second. The third subheading is female students' experiences in real estate education. Female students' perceptions of the real estate industry and career prospects are the fourth subheadings.

Total Student's Enrolment ND and HND programmes, 2009 – 2022

This first subsection of the results discusses the enrolment patterns for ND and HND programmes in the Estate Management and Valuation Department at Federal Polytechnic Ede, Nigeria, from 2009 to 2022. According to the enrolment data, the total students' enrolments for ND and HND programmes increased from around 100 students in 2009 to around 180 students in 2022. Figure 1 depicts the total enrolments over the study period, demonstrating the consistent upward trends for both programmes. In comparison, enrolment in the ND has gradually increased over the last thirteen years, whereas enrolment in the HND soared between 2020 and 2022.

[Figure I. Here]

Percentages of Female Student Enrolment, 2009 - 2022

Next, the percentages of female student enrolment trends were investigated, and the results are presented in Figure 2. According to the trend lines in Figure 2, the percentages of female student enrolments for ND and HND are stable below 50 per cent in the past thirteen years. Enrolments in both programmes peaked in 2021; while the recorded rate for HND is just under 60 per cent, ND is slightly above 60 per cent. Surprisingly, the observed percentages of more than 30% in ND and HND for most of the study years contradict the findings in Dada (2017) and statistics from other universities, as noted in the literature review. The analysis results show a balanced gender structure among real estate student enrolments, implying that real estate education at FPE is inclusive. There are several benefits to achieving gender equality in real estate education student enrolment. First, it encourages diversity in the field by creating an inclusive learning environment in which all students feel valued and respected. It fosters a safe open discussion and collaboration environment, allowing students to learn from one another's distinct experiences and perspectives. It enables women to gain the knowledge and skills required to navigate and succeed in a traditionally maledominated field. It will also help to dispel societal stereotypes about gender roles and expectations,

as well as the belief that certain professions are only appropriate for one gender. This shift in perspective may encourage more women to pursue careers in real estate and related fields and serve as mentors and role models for future generations. Men have traditionally dominated the real estate sector, but if enrolment is balanced by gender with an inclusive students' experience, women can develop the skills and confidence required to work in the industry. Bigelow et al. (2016) hypothesised that as more women pursue degrees in construction management, the proportion of women working in the industry will increase. The following section analyses survey responses regarding students' experiences in real estate education, perceptions of the real estate industry and career prospects.

[Figure 2. Here]

In this second section, the survey results are discussed. Table III shows the profiles of 138 surveyed female students in the ND and HND Estate Management and Valuation Department at Federal Polytechnic Ede, Nigeria. Table 3 reveals that ND II students comprised 31.2 per cent of the study's sample. One group of the students (71.0%) had prior work experience in the real estate industry, with most of their employment during their industrial training. Although 54.3 per cent of the surveyed students moved to estate management due to a change in the course during the admission process by the institution or academic incapacitation, 88.4 per cent of them found estate management interesting. The survey includes first-year (ND I) students and students with prior real estate work experience. The ND I students have just been in their programme for two months and are barely halfway through their first semester. Other students (ND II, HND I, and HND II) had worked in the real estate industry for at least three months while enrolled in their studies; hence, their responses about their real estate education experiences, perceptions of the real estate industry, and career prospects were considered reliable. As a result, only these student groups were employed in the subsequent analysis, the results of which are presented in Table IV.

[Table III. Here]

Female Students' Experiences in Real Estate Education

Table IV displays the one-sample t-test outcomes for the measurement items. Regarding students' real estate education experiences, respondents strongly agreed that the faculty was not male-dominated (E1) and that female students were not discriminated against (E2). This finding could be attributed to the high proportion of female teaching staff in the estate management and valuation department at Federal Polytechnic Ede. The department has 16 faculty members, nine of whom are female. The gender balance among teaching staff significantly influences students' perceptions of diversity. For instance, a teaching staff that includes a balanced representation of genders provides students with a broader spectrum of perspectives, experiences, and teaching methods. This balance empowers students by ensuring they have access to diverse educators who understand and support their individual needs. Moreover, a gender-balanced faculty helps students imagine themselves in various roles and encourages them to pursue their interests and potential careers

without being constrained by gender norms. Additionally, it fosters inclusive learning environments where all students feel valued and respected, regardless of their gender. However, the results in Table IV indicated that the students disagreed, on the absence of male culture in classrooms (E3) and female students' access to networking and mentorship opportunities (E7). These factors influence female students' self-esteem, motivation, and academic performance (E6), which may impact their real estate career prospects. Furthermore, the findings indicate a lack of agreement among female students about not being intimidated by male classmates (E4) and not experiencing gender-based harassment (E5). These findings suggest that some female students would have considered these items a significant challenge. Meanwhile, previous studies (Barreto et al., 2017; Adogbo et al., 2015; Francis and Prosser, 2014) identified each factor as a significant challenge.

[Table IV. Here]

Female Students' Perceptions of the Real Estate Industry and Career Prospects

On the female students' perceptions of the real estate industry, the results show that female students agree that the real estate industry is male-dominated (P1) and operates with inflexible and long working hours (P3). However, real estate practice is not masculine (P8). Furthermore, female students disagreed with the statements that women are equally likely to be employed in the real estate industry as men (P2), that there are no gender biases or stereotypes in the real estate industry (P5), that real estate practice is competitive and stressful (P4), and that women have access to female role models and mentors in the real estate industry (P6). Women not facing harassment or bullying in the real estate industry were also identified (P7), with a mean score of 2.86, which was not statistically significant. These findings suggesting gender discrimination and anti-women attitudes in the real estate industry align with responses from graduating real estate students who reported their likelihood of working in real estate firms and recent female graduates in real estate practice in Chiwuzie et al. (2022) as well as professional women working in the real estate industry in Olawunmi et al. (2020). These industry factors appear not to negatively impact the respondents' decision to pursue a career in real estate. This assertion is supported by their responses to career prospects items C1 and C2, in which they agreed with the stated intention to work in real estate firms after graduation and would likely remain in the industry for an extended period. However, students disagreed with items C3 and C4, while responses to item C5 were mixed and not significantly greater than the neutral.

Overall, the analysis of female students' perceptions indicates that there is a lack of diversity and inclusivity in the real estate industry. As a result, for long-term economic growth to be sustained, the real estate sector must become more diverse. Promoting diversity in the real estate industry necessitates a proactive strategy, a commitment to inclusivity, and the willingness to challenge existing norms and biases. It is critical to create an environment in which everyone, regardless of gender, has an equal opportunity for success and development. It is also critical to provide

mentorship, training, and a network of support for women in real estate to further their careers. This can help to dispel gender stereotypes and encourage more women to enter, remain and succeed in the field, resulting in a more equal and diverse real estate professional community.

5. Conclusion

This study examined gender diversity in real estate education at Federal Polytechnic Ede, Nigeria, focusing on female students' enrolment, experiences, perceptions, and career prospects. The specific questions this study sought to address include: What are the total enrolments of real estate students at Federal Polytechnic Ede, Nigeria, between 2009 and 2022? What are the percentages of female students enrolled between 2009 and 2022? What are the experiences of female students in real estate education? How do female students perceive the real estate industry? What are the female students' career prospects?

Analysis of the enrolment data revealed that the total annual enrolments for ND and HND programs increased from around 100 students in 2009 to around 180 students in 2022. Additionally, the percentages of female enrolments in both programs have steadily increased and are stable at around 50 percent over the study period. Thus, the gender composition of real estate student enrolments is balanced, suggesting that real estate education at FPE is inclusive.

The analysis of the students' experiences revealed that female students had access to a gender-balanced faculty and were not discriminated against. However, they face a lack of professional networking and mentorship opportunities, which impacts their self-esteem and motivation. Furthermore, female students perceived that gender discrimination and anti-women attitudes are prevalent in the real estate industry; however, these elements would not deter their decision to pursue a career in the real estate industry. They expressed an intention to work in real estate firms after graduation and are likely to remain in the industry for an extended period.

Historically, real estate, like other construction-related disciplines, has been male-dominated, with women facing barriers and biases that have restricted their participation and advancement. Promoting equal gender representation in the real estate sector can dismantle these barriers. Gender parity in enrolment and an inclusive learning environment can improve female students' experiences, encouraging women to pursue real estate careers and equipping them with the necessary skills and knowledge to succeed. Consequently, the real estate sector must become more diverse. A proactive dedication to inclusivity, mentorship, and the willingness to challenge existing norms and biases is needed to enable women to pursue real estate careers. This will ensure a steady stream of female professionals into the industry, leading to a more innovative and sustainable real estate professional community.

The results of this research are significant for academic institutions, policymakers, and industry stakeholders interested in creating a more diverse and inclusive real estate sector. This study adds to the knowledge of gender diversity in African higher education institutions, particularly within the Polytechnic context. We acknowledge that the study focuses on real estate education in just one institution; consequently, generalizing the results is difficult. Nonetheless, it does leave

potential for more research in this area. Longitudinal studies involving participants from several higher education institutions, various cultural circumstances, and alumni feedback are needed to improve the results. Furthermore, including male participants to provide their experiences and perceptions would give fair assessments.

References

- Adeyemi, K., and Akpotu, N. (2004), "Gender Analysis of Student Enrolment in Nigerian Universities", *Higher Education*, Vol. 48 No. 3, pp.361–378. http://www.jstor.org/stable/4151522
- Adogbo, K. J., Ibrahim, A. D. and Ibrahim, Y. M. (2015), "Development of a framework for attracting and retaining women in construction practice", *J Constr Dev Countries*, Vol. 20 No. 1, pp.99–115.
- Agu, N. N. and Omenyi, A. S. (2013), "Gender Enrolment Status in Higher Education Courses: A Situation Assessment and Analysis of a South Eastern Federal University", *Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS)*, Vol. 4 No.3, pp.517-524.
- Ahmad, A. (2009), "Gender Differences and Trends in the Participation of Malaysians in Education: Implications on Employment Outcomes", *The Journal of International Management Studies*, Vol. 4 No. 2, pp.65-74.
- Almelhem, S., Almshhor, E., Alabdullah, S., Kadan B., Alzoabi, M. and Jhar, A. (2022), "Factors affecting gender balance in higher education in northwest Syria: Challenges and potential actions", *International Journal of Educational Research*, Vol. 3 No. 100164, pp.1-9.
- Astor, E. N., Onsalo, M. R. and Infante-Perea, M. (2017), "Women's career development in the construction industry across 15 years: main barriers", *Journal of Engineering Design and Technology*, Vol. 15 No. 2, pp.199-221. DOI: 10.1108/JEDT-07-2016-0046
- Ayodele, T. A. (2018), "Career choice of real estate students in Nigeria: The explaining influences in comparative perspective", *Property Management*, https://doi.org/10.1108/PM-02-2018-0013.
- Barreto, U., Pellicer, E., Carrión, A. and Torres-Machí, C. (2017), "Barriers to the professional development of qualified women in the Peruvian construction industry", *Journal of Professional Issues in Engineering Education and Practice*, Vol. 143 No. 4, pp.05017002-1-05017002-10. Doi: 10.1061/(ASCE)EI.1943-5541.0000331
- Bigelow B. F, Bilbo D, Mathew M, Ritter L, and Elliott, J. W. (2015), "Identifying the most effective factors in attracting female undergraduate students to construction management", *Int J Constr Educ Res*, Vol. 11 No. 3, pp.179 –195.
- Bradley, J., Cook, D. A., McDonald, D. and North, S. (2009), "We, They, and Us: stories of women stem faculty at historically black college and universities", In: Brown-Glaude, W. R. (Eds) Doing diversity in higher education: Faculty Leaders share challenges and strategies. Rutgers University Press, New Brunswick, pp.103–118.
- Castellano, R., and Rocca, A. (2014), "Gender gap and labour market participation: A composite indicator for the ranking of European countries", *International Journal of Manpower*, Vol. 35 No. 3, pp.345-367.
- Cech, E. A. (2013), "The self-expressive edge of occupational sex segregation", *American Journal of Sociology*, Vol. 119, pp.747–89.

- Charles, M., and Bradley, K. (2009), "Indulging our gendered selves? Sex segregation by field of study in 44 countries", *American Journal of Sociology*, Vol. 114, pp.924–76.
- Chiwuzie, A., Aiyepada E. G. and Prince, E. M. (2022), "Female Students' Carrier Choices: how gendered role affects women's participation in Nigerian Real Estate Profession", In 21st Annual African Real Estate Society (AFRES) Conference, 6-9 September 2022, Accra, Ghana, pp.147-163.
- Clack, A., & Gabler, J. (2019), "Managing Diversity and Inclusion in the Real Estate Sector", Routledge.
- Dada, J. O. (2017), "Factors affecting women's enrolment in construction education in Nigeria", *Journal of Construction Project Management and Innovation*, Vol. 7 No. 1, pp.1893-1907.
- Dainty, A. R., Bagilhole, B. M. and Neale, R. H. (2000), "A grounded theory of women's career under-achievement in large UK construction companies", *Constr Manage Econ*, Vol. 18 No. 2, pp.239–250.
- Dainty, A. R. and Edwards, D. J. (2003), "The UK building education recruitment crisis: a call for action", *Constr Manage Econ*, Vol. 21 No.7, pp.767–775.
- Ekene, O. G and Oluoch- Suleh, E. (2015), "Role of Institutions of Higher Learning in Enhancing Sustainable Development in Kenya", *Journal of Education and Practice*, Vol. 6 No. 16, pp.91-102.
- Faleye, B. A. and Dibu-Ojerinde, O. O. (2006), "A Review of the Enrolment and Performance of Male and Female Students in Education / Economics Programme of Obafemi Awolowo University, Ile-Ife, Nigeria:", *J. Soc. Sci.*, Vol. 12 No. 2, pp.143-146.
- Francis V. and Prosser, A. (2014), "Exploring vocational guidance and gender in construction", *Int J Constr Educ Res*, Vol. 10 No. 1, pp.39–57.
- Lenaers, S. (2010), "Differing labour market positions of ethnic graduates in Flanders", *Equality, Diversity and Inclusion: An International Journal*, Vol. 29 No. 4, pp.380-394.
- Ling F. Y. Y., Leow, X. X., Lee, K. C. (2016), "Strategies for attracting more construction-trained graduates to take professional jobs in the construction industry", *J Prof Issues Eng Educ Pract*, Vol. 142 No.1, 04015009
- Ling F. Y. Y. and Pei Poh, Y. (2004), "Encouraging more female quantity surveying graduates to enter the construction industry in Singapore", *Women in Management Review*, Vol. 19 No. 8, pp.431-436. https://doi.org/10.1108/09649420410570234
- Lombardi, M. R. (2017), "Women engineers in construction industry: the feminisation possible and gender discrimination", *Cad. Pesqui.* Vol. 47 No. 163. http://dx.doi.org/10.1590/198053143619.
- Momoh, J. J., Abudu, M., Ukachi, P. A. and Luqman, M. A. (2020), "Gender Analysis of Students' Enrolment in the Federal Polytechnic, Ado-Ekiti, Ekiti State: Impacts on Women Empowerment and Technopreneurship Education", *International Journal of Engineering Research & Technology (IJERT)*, Vol. 9 No. 06, pp.1411-1416.
- Mosimanegape, N. T. and Ijasan, K. (2022), "Creating an inclusive built environment: achieving gender equality in the real estate industry", Procs 21st Annual African Real Estate Society (AFRES) Conference, 6-9 September 2022, Accra, Ghana, pp.147-163.
- Norberg, C. and Johansson, M. (2021), "Women and Ideal Women: the representation of women in the construction industry". *Gender Issues*, Vol. 38, pp.1-24.
- Odaga, G. (2020), "Gender in Uganda's tertiary educational distribution", *Social Sciences & Humanities Open*, Vol. 2 No. 1, p.100023.

- Ojetunde, I., Sule, A. I., Kemiki, O. A. and Olatunji, I. A. (2019), "Factors affecting the academic performance of real estate students in a specialised Federal University of Technology in Nigeria". *Property Management* Vol. 38 No. 2, 2020 pp. 177-198. DOI: 10.1108/PM-08-2019-0044
- Oladapo, R. A. (2017), "Gender Bias in the Selection of Estate Surveyors and Valuers in Lagos Property Market", *FUTY Journal of the Environment*, Vol. 11 No. 1, pp.101-111.
- Oluwumi, A. O., Emeghe I. J., Oluwadamilola A., Fulani O., Peter N. J. and Akinjare, O. A. (2017), "Gender inequality and women discrimination in real estate firms in Lagos State, Nigeria", 29th International Business Information Management Association Conference (IBIMA) May 3-4, Vienna Austria, pp.4367-4377.
- Oo, B. L. and Widjaja, E. C. (2018), "Female Student Enrolments in Construction Management Programs", In K.W. Chau et al. (eds.), 21st International Symposium on Advancement of Construction Management and Real Estate, https://doi.org/10.1007/978-981-10-6190-571.
- Opatoyinbo, O. O. and Babatunde, O. A. (2016), "Comparative Analysis of Gender Disparity Enrolment in Surveying Training in Tertiary Institution". FIG Working Week May 2–6, Christchurch, New Zealand.
- Patterson, L. J., Amy, K., Seaton P., and Leslie, H. (2009), "Challenges for Women Department Chairs", In Procs 33rd Academic Chairpersons Conference, Charleston, SC. Charleston: New Prairie Press. https://newprairiepress.org/accp/2016/Trends/2.
- Peter, N.J., Ayedun, C., Oloyede, S., Iroham, O. and Oluwatayo, A. (2017), "Gender attrition rate differences among estate management students of universities within southwest Nigeria", *In* 17th EDULEARN Conference 3rd-5th July, Barcelona, Spain.
- Phathara-on W., Mohmad Y. S. and Abdul Halim, A. M. (2016), "A Framework for Assessing Gender Influence on Career Choice of Undergraduate Students in Thailand", In: International conference on Business, Economics, Social Science & Humanities (BESSH), Vol. 133 No. 1, pp.16-21.
- Poon, Joanna and Brownlow, Michael (2016), "Employment outcomes and patterns of real estate graduates: is gender a matter?", *Property Management* Vol. 34 No. 1, pp.44-66. http://dx.doi.org/10.1108/PM-01-2015-0003
- Pauli, K.M. S. (2013). "All of my bosses have been men"—on gender structures in the real-estate industry. *Property management*, *31*(5), 420-434.
- Sagebiel, F. (2003), "New initiatives in science, technology and mathematics education at the formal level: masculinity cultures in engineering departments in institution of higher education and perspectives for social change", *Proceedings of GASAT Conference*, 6-11 July.
- Sewalk S, Nietfeld K (2013), "Barriers preventing women from enrolling in construction management programs", *Int J Constr Educ Res* Vol. 9 No. 4, pp.239–255.
- Soo-Cheen, K., Sanmargaraja, S. & Soon-Ham, W. (2020), "Male Perspectives on Female Performance in the Real Estate Industry of Malaysia", *International Journal of Social Science Research*, Vol. 2 No. 2, pp.23-31.
- The Federal Polytechnic Ede (2021), "Student handbook" The Federal Polytechnic Ede, Nigeria.
- Ugwulebo, E. O. (2011), "Gender perception: a critical obstacle to gender equity and sustainable development", *Journal of International Gender Studies*, Vol. 1 No. 7, 119-124.

Wieczorek-Szyma'nska, A. (2020), "Gender Diversity in Academic Sector—Case Study", *Administrative Science* Vol. 10 No. 41, pp.1-20. Doi: 10.3390/admsci10030041

Wilkinson, S., Halvitigala, D. and Antoniades, H. (2017), "The future of the valuation profession: shaping the strategic direction of the profession for 2030", in 23rd Annual Pacific Rim Real Estate Society Conference, Sydney, Australia, Pacific Rim Real Estate Society.

Table I. Measurement items on female students' experiences, perceptions and career prospects

Cate	Category				
Stud	ents' Experiences				
E1	I did not have male-dominated Lecturers and Instructors				
E2	There is no discrimination against female students				
E3	Male culture does not exist in the classroom				
E4	Female students are not intimidated by their male fellow students				
E5	I did not face gender-based harassment				
E6	I feel that gender biases influence female students' self-esteem, motivation, and academic performance.				
E7	I have access to networking and mentorship opportunities				
Stud	ents' Perceptions of the real estate industry				
P1	I feel that the real estate industry is male-dominated				
P2	Women are equally likely to be employed in the real estate industry just as men				
P3	The real estate industry operates for long working hours				
P4	I feel that real estate practice is not competitive and stressful				
P5	There is no gender biases and stereotypes in the real estate industry				
P6	I feel that women have access to role models and mentors in the real estate industry				
P7	Women do not face harassment and bullying in the real estate industry				
P8	I feel that real estate practice is not "masculine"				
Stud	Students' Career prospects				
C1	I plan to work in real estate firms after graduation				
C2	I intend to remain in the industry for the next ten years.				
C3	Females have equal access to the same career opportunities as men.				
C4	The prospects are equal for men and women				
C5	Women receive adequate career support, such as career planning and mentoring.				
(TD 1 1	a bry andle and				

(Table by authors).

Table II. Cronbach's alpha coefficient for the constructs of the questionnaire

Construct	Number of Items	Cronbach's Alpha

Students' experiences	7	.972
Students' perceptions	8	.986
Students' career prospects	5	.977

(Table by authors).

Table III. Profiles of current female students in the Estate Management and Valuation programmes (n = 138)

Characteristic	Frequency	Percentage
Age group		.
18-20	26	18.8
21-23	56	40.6
24-26	45	32.6
27+	11	8.0
Level of study		
ND I	40	29.0
ND II	43	31.2
HND I	26	18.8
HND II	29	21.0
	1	
Work experience in the real estate industry	Taa	T =
Yes	98	71.0
No	40	29.0
Type of work		
Full time	5	3.6
Part-time	0	0.0
Industrial training	93	67.4
Years of work experience in the real estate industry		
< 1 year	43	31.2
1–2 years	50	36.2
>2 years	5	3.6
Incidence of enrolling in Estate Management and Valuation ND prog	тратто	
Personal Choice	63	45.7
Change in course during the admission process by the institution	71	51.4
Change due to Academic incapacitation	4	2.9
change due to Academie meapachation	ן ד	2.7
Rating of interest in Estate Management and Valuation		
Interesting	122	88.4
Neutral	13	9.4
Not interesting	3	2.2

(Table by authors).

Table IV. One-sample t-test results for female students' experiences, perceptions and career prospects

Item	Mean	SD	t-value	Sig (2-tailed)	Remark
E1	3.74	1.236	6.824	.000	Sig.
E2	3.64	1.195	1.728	.032	Sig.
E3	1.82	1.193	-10.342	.000	Sig.
E4	3.03	1.377	.247	.805	Not Sig.
E5	2.83	1.332	-1.470	.144	Not Sig.
E6	3.86	1.233	8.214	.000	Sig.
E7	1.90	1.048	-12.342	.000	Sig.
P1	3.95	1.069	10.429	.000	Sig.
P2	2.68	1.367	-2.740	.007	Sig.
P3	3.86	1.179	8.593	.000	Sig.
P4	2.75	1.387	-0863	.039	Sig.
P5	2.55	1.351	-3.906	.000	Sig.
P6	2.56	1.351	-3.844	.000	Sig.
P7	2.88	1.327	962	.338	Not Sig.
P8	3.88	1.217	8.464	.000	Sig.
C1	3.56	1.430	4.585	.000	Sig.
C2	3.51	1.441	4.194	.000	Sig.
C3	2.30	1.223	-6.753	.000	Sig.
C4	2.56	1.351	-3.844	.000	Sig.
C5	2.80	1.476	-1.615	.109	Not Sig.

(Table by authors).

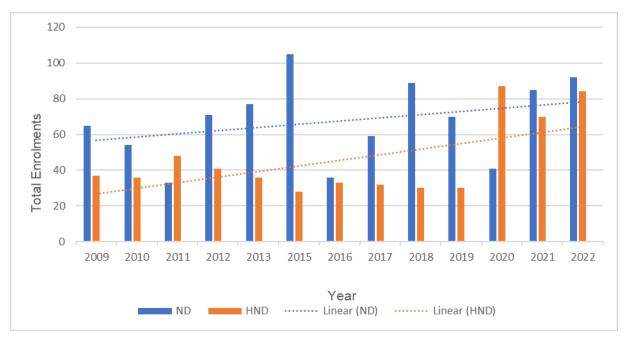


Figure 1. Total Enrolment in Estate Management and Valuation Programmes, 2009-2022 (Figure by authors).

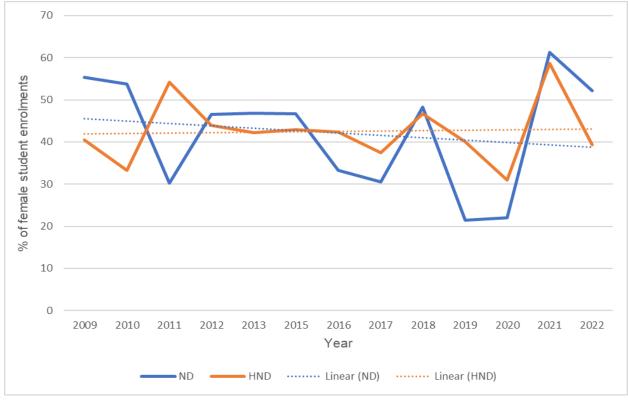


Figure 2. Percentage of female enrolment in Estate Management and Valuation programmes, 2009-2022

(Figure by authors).